KOAMTAC

KDC100 User Manual

(Rev. 2.85/2.86/3.02)

November, 2011

TABLE OF CONTENTS

LISTING OF FIGURES 6
LISTING OF TABLES 7
1. INTRODUCTION 9
1.1 KDC Package 10
1.2 KDC Characteristics 11
2. INSTALLATION 13
2.1 KoamTac Installation Wizard 13
Windows XP 13
Vista and Windows 7 18
2.2 Manual Installation 21
Windows XP, Vista, and 7 21
3. OPERATING THE KDC 22
3.1 Getting Started 22
Attach Neck Strap to KDC 22
Charge KDC Battery 22
Configure KDC 23
3.2 Basics 24
Reading Barcodes 24
Synchronizing Barcode Data to PC 24
3.3 KDC Menus 25
KDC Mode Menu 32
View Data Menu 32
Set Barcodes Menu 32
Code Options Menu 32
Scan Options Menu 32
Data Process Menu 33
BT Service - KDC200/250/300/400 36
GPS Config - KDC250 36
System Menu 37
3.4 LED Status 38
KDC100/200/250/300 38
KDC400 38
3.5 Empty Battery 38
3.6 Buffer Full 38
3.7 Reset Feature 39
3.8 Replace Battery 40

4. SYNCHRONIZATION 41
4.1 KTSync Menu 41
4.2 File Menu 44
Connect to KDC 44
Synchronize 44
4.3 Synchronization Settings 45
Destination of Data 45
Synchronization Methods 46
Current KDC Wedge Method 47
Synchronization Options 48
Application Options 48
4.4 Barcode & KDC Settings 49
Select Symbologies and Symbology Options 50
Data Editing Option 50
4.5 Others Settings 51
5. APPLICATION GENERATION 52
5.1 Application Generation 53
Generate Application 53
Data Filter Settings 54
Application Download and Execution 56
5.2 Predefined Applications 57
Master/Slave 57
Pick/Bin 59
DB Lookup Application 61
Inventory Application 63
6. TROUBLESHOOTING 64
7. WARRANTY 65
8. CONTACT INFORMATION 66
APPENDIX A - BARCODE & SCAN OPTIONS 67
A.1 Symbologies 67
A.2 Code Options 69
Transmission of Start and Stop Characters 69
Reverse Direction 69
Symbology Conversion 69
Verification of Optional “Check Digit” 70
Transmission of “Check Digit” 70
Resolution of Inconsistencies 71
A.3 Miscellaneous Barcode Information 72
Height of a Linear Barcode 72

Check Characters 72
Prevent Interleave 2 of 5 Partial Reading 72
Equation to Determining Potential Number of Stored Barcodes 73
Data Buffer Full 73

APPENDIX B – FAQ 74

B.1 Symbology 74
B.2 Host Interface 75
B.3 Battery 75
B.4 Memory 75
B.5 Programming 76

APPENDIX C - SPECIAL BARCODES 77

C.1 Set Symbologies (KDC100/200/250) 77
C.2 Barcode Options (KDC100/200/250) 80
C.3 Delete Last Scanned Barcode (KDC100/200/250) 83
C.4 Scan Options (KDC100/200/250) 84
C.5 Scan Timeout (KDC100/200/250) 85
C.6 Minimum Barcode Length (KDC100/200/250) 86
C.7 Security Level (KDC100/200/250) 88
C.8 Data Process - Wedge/Store (KDC100/200/250) 89
C.9 Data Process – Data Edit (KDC100/200/250) 90
C.10 Data Process - Data Format – Handshake (KDC100/200/250) 91
C.11 Data Process - Termination Character & Duplicate Check (KDC100/200/250) 92
C.12 Bluetooth (KDC200/250) 93
C.13 Bluetooth Auto Power On Time (KDC200/250) 96
C.14 Bluetooth PWR Off Time (KDC200/250) 98
C.15 Auto lock Time (KDC200/250) 101
C.16 HID Keyboard layout (KDC100/200/250) 102
C.17 HID Initial Delay (KDC200/250) 103
C.18 HID Character Delay (KDC200/250) 104
C.19 HID Control Character (KDC200/250) 105
C.20 System (KDC100/200/250) 106
C.21 Sleep Timeout (KDC100/200/250) 109
C.22 ETC (KDC100/200/250) 111
C.23 Function (KDC100/200/250) 112
C.24 Number (KDC100/200/250) 113
C.25 Lower Case Alphabet (KDC100/200/250) 114
C.26 Upper Case Alphabet (KDC100/200/250) 117
C.27 Control Character (KDC100/200/250) 120
C.28 Symbol Character (KDC100/200/250) 121
C.29 GPS (KDC250) 125

C.30 Auto Power Off Timeout (KDC250) 126

INDEX 127

LISTING OF FIGURES

Figure 1 – KDC Package 10
Figure 2 - Characteristics of KDC100 11
Figure 3 - Characteristics of KDC200 / KDC250 / KDC300 12
Figure 4 - Location of Scroll Buttons 23
Figure 5 - KDC Display 24
Figure 6 - KTSync® Synchronizer Menu 41
Figure 7 – File Menu 42
Figure 8 – Setting Menu 42
Figure 9 – Application Menu 43
Figure 10 – About Menu 43
Figure 11 - COM Port Selection for KDC 44
Figure 12 - KTSync® Synchronization Settings 45
Figure 13 - Barcode & KDC Settings, Symbologies, Data Editing and Scan Options 49
Figure 14 - KTSync® Confirmation Settings 51
Figure 15 – Application Menu 52
Figure 16 – Application Warning Window 52
Figure 17 – Application Generation Menu 53
Figure 18 – Data Filter Settings 54
Figure 19 – Master/Slave Application Settings 57
Figure 20 – Master/Slave Application Flow Chart 58
Figure 21 – Pick/BIN Application Menu 59
Figure 22 – Pick/BIN Application Flow Chart 60
Figure 23 – DB Lookup Application Menu 62
Figure 24 – Inventory Application Menu 63

LISTING OF TABLES

Table 1 - Features of KDC 9
Table 2 – Approximate Time to Charge KDC Battery 22
Table 3 - KDC Menu Options 31
Table 4 - Explanation of LEDs 38
Table 5 - Troubleshooting Techniques 64
Table 6 - Symbologies Supported by KDC 67
Table 7 - Add-on for EAN-13 Symbology 68
Table 8 - Add-on for EAN-8 Symbology 68
Table 9 - Symbology Conversion 69
Table 10 - Verification of Optional "Check Digit" 70
Table 11 - Transmission of "Check Digit" 70
Table 12 - Resolution of Inconsistencies 71
Table 13 - Symbologies Supported by KDC 74

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May be covered under one or more pending and/or US Patents, including US Pat. No. 7,769,917; 7,954,710.
KDC® is a registered trademark and property of KoamTac, Inc.
KoamTac® is a registered trademark and property of KoamTac, Inc.
KTSync® is a registered trademark and property of KoamTac, Inc.

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO ANY TYPE OF MOISTURE. DO NOT LOOK DIRECTLY INTO LASER OR POINT THE LASER INTO ANOTHER PERSON'S EYES. EXPOSURE TO THE BEAM MAY CAUSE EYE DAMAGE.

CAUTION:

Changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user's authority to operate the equipment.

WARNING:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

INFORMATION TO USER:

This equipment has been tested and found to comply with the limit of a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation; if this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user, is encouraged to try to correct the interference by one or more of the following measures:

1. Reorient / Relocate the receiving antenna.
2. Increase the separation between the equipment and receiver.
3. Connect the equipment into an outlet on a circuit difference from that to which the receiver is connected.
4. Consult the dealer or an experienced radio/TV technician for help.

WARNING: RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

1. INTRODUCTION

Congratulations on purchasing KoamTac's revolutionary barcode scanner and data collector. Lightweight and compact, with a user-friendly design and superior functionality, KoamTac's KDC works in a variety of portable applications. Use it independently or as an accessory to your PC, PDA, or smartphone. To find out more about KoamTac, Inc. and our family of products, visit us at www.koamtac.com.

FEATURES	KDC100	KDC200	KDC250	KDC300	KDC400
USB CONNECTIONS	**2**	1	1	1	1
RECHARGEABLE BATTERY	**YES**	YES	YES	YES	YES
SCAN ENGINE	**Laser**	Laser	Laser	Imager	Laser/ Imager
AUTOMATIC DATA UPLOAD	**YES**	YES	YES	YES	YES
STORES10,000+ BARCODES	**YES**	YES	YES	YES	No
KTSYNC® SOFTWARE	**YES**	YES	YES	YES	YES
SDK FOR DEVELOPERS	**YES**	YES	YES	YES	YES
SUPPORTS MICROSOFT© WINDOWS XP, VISTA, 7 & MOBILE 5.0+	**YES**	YES	YES	YES	YES
ANDROID, BLACKBERRY, IOS	**NO**	YES	YES	YES	YES
BLUETOOTH	**NO**	YES	YES	YES	YES
GPS	**NO**	NO	YES	NO	NO

Table 1 - Features of KDC

1.1 KDC Package

The standard KDC package contains:

1. One KDC Barcode Data Collector
2. One USB Cable
3. One Lanyard (KDC100/200/250/300) or One Hand Strap (KDC400)
4. KoamTac Installation CD with
   - KTSync© for Microsoft Windows XP, Vista, 7 and Mobile 5.0+
   - KDC Device Driver
   - User Manual
5. One Protective KDC Rubber Case (KDC100/200/250/300) or One Smartphone Protective Rubber Case (KDC400)

NOTE: Depending on your region or distributor, package contents may vary.

KDC100/200/250/300

KDC400

Figure 1 – KDC Package

1.2 KDC Characteristics

Before you use your KDC, please become familiar with its physical characteristics. Refer to Figure 2 and Figure 3 below which indicate placement of scan and scroll buttons, OLED display, LEDs, and ports on your KDC. All KDC models are similar except for the KDC100 which includes an additional USB connector.

KDC100 Barcode Reader and Data Collector

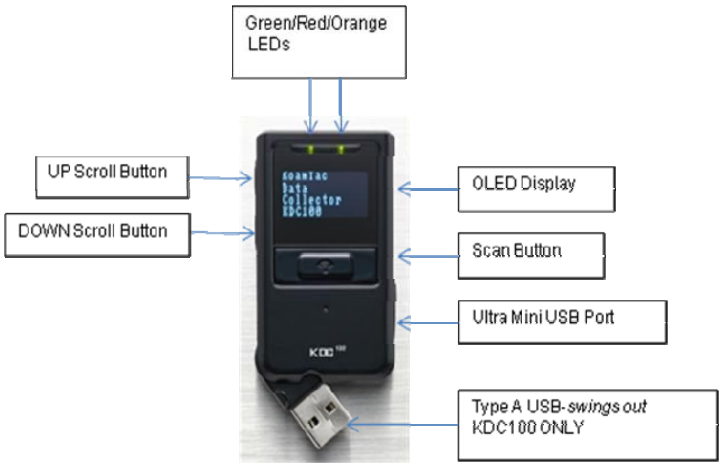
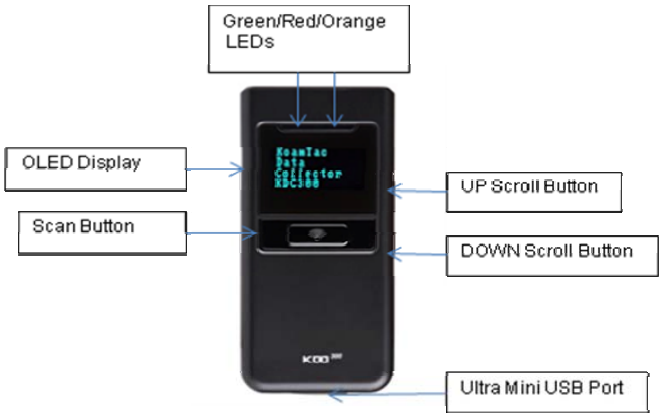


Figure 2 - Characteristics of KDC100

KDC200 / KDC250 / KDC300
Barcode Reader and Data Collector

KDC200



KDC250/300

KDC400

Figure 3 - Characteristics of KDC200 / KDC250 / KDC300

2. INSTALLATION

2.1 KoamTac Installation Wizard

Windows XP

WARNING: ***DO NOT CONNECT KDC TO USB PORT PRIOR TO INSTALLATION***

1. Insert KoamTac Installation CD into your computer's CD drive.
2. Click **Start** icon then **My Computer** icon. A listing of devices on your computer will be displayed including the disk drive containing the KoamTac Installation CD.
3. Click on the KoamTac Installation CD icon then click on the Setup directory. Click on the PC_Setup.exe file which executes the KTSync Setup Wizard.

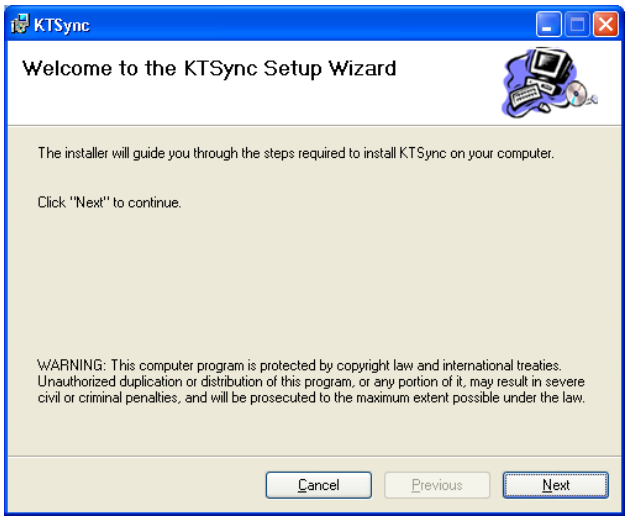
NOTES

- If KTSync Setup Wizard locates an older version of KTSync on your computer, you will be prompted to remove the older program before installing the new version. Select Remove KTSync then click Finish. When removal is complete, click Close. Go to Step 2 to run KTSync Setup Wizard.
- If you have any problems, please refer to the Manual Installation section.

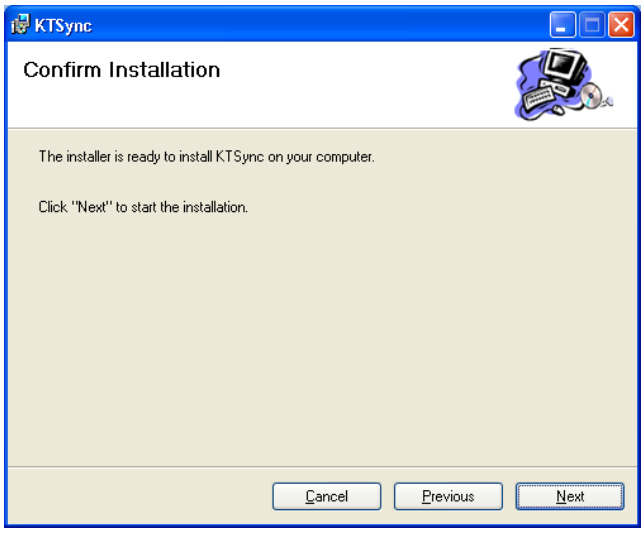
KTSync Setup Wizard

Below are the screen images you will see during the installation of KTSync.

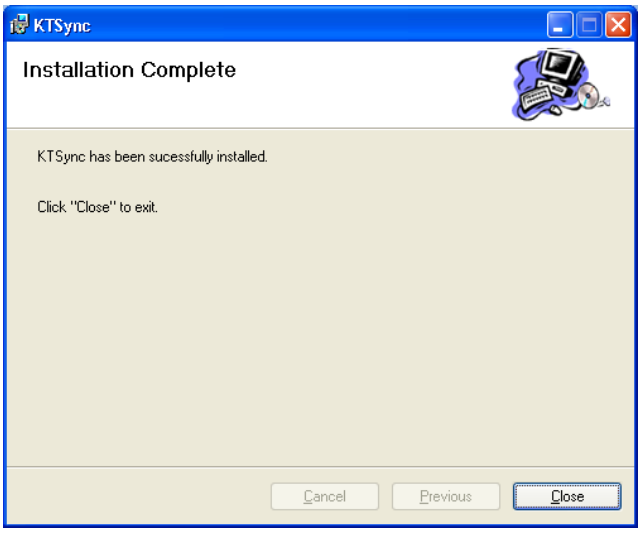
- Click **Next** icon in KTSync Setup Wizard window


KTSync
Welcome to the KTSync Setup Wizard
The installer will guide you through the steps required to install KTSync on your computer.
Click "Next" to continue.
WARNING: This computer program is protected by copyright law and international treaties. Unauthorized duplication or distribution of this program, or any portion of it, may result in severe civil or criminal penalties, and will be prosecuted to the maximum extent possible under the law.
Cancel
Previous
Next

- Click **Next** icon in KTSync Confirm Installation window



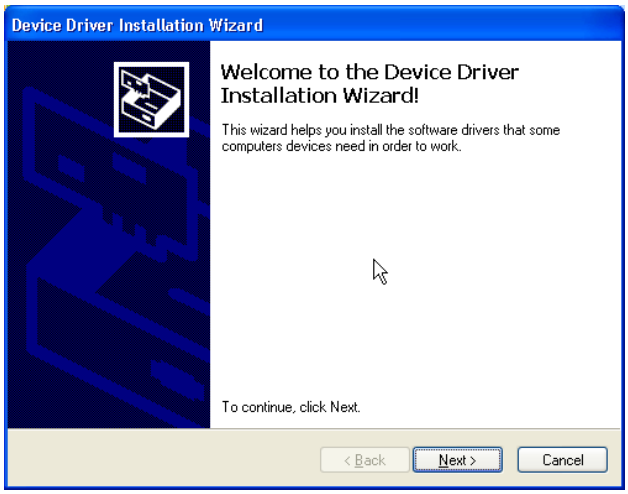
- Within a few minutes, installation of KTSync will be complete. Click **Close** icon and wait for the Device Driver Installation Wizard to load.



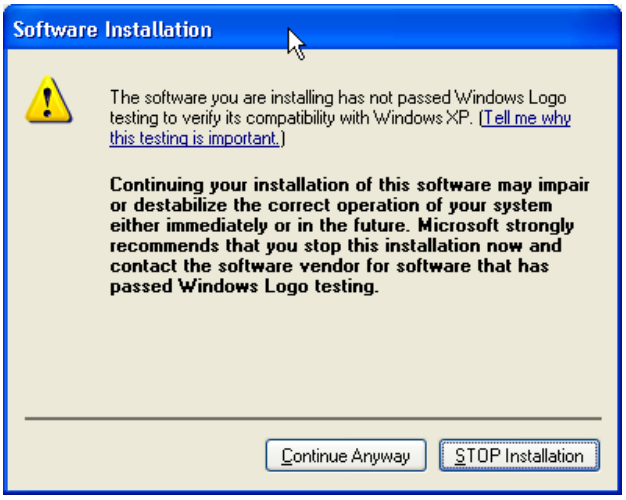
Device Driver Installation Wizard

Below are the screen images you will see during the installation of the KDC Device Driver.

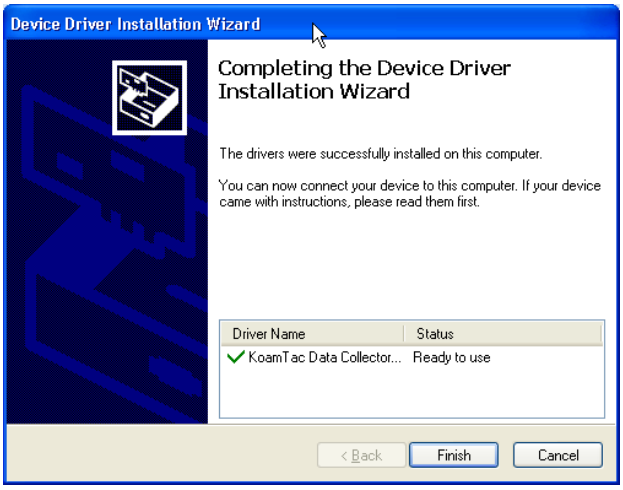
- Click **Next** icon in Device Driver Installation Wizard window


Device Driver Installation Wizard
Welcome to the Device Driver Installation Wizard!
This wizard helps you install the software drivers that some computers devices need in order to work.
To continue, click Next.
< Back
Next >
Cancel

- Click **Continue Anyway** icon in Software Installation Logo testing window


Software Installation
The software you are installing has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the software vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation

- Click **Finish** icon in Device Driver Installation Wizard window


Device Driver Installation Wizard
Completing the Device Driver Installation Wizard
The drivers were successfully installed on this computer.
You can now connect your device to this computer. If your device came with instructions, please read them first.
Driver Name
Status
KoamTac Data Collector...
Ready to use
< Back
Finish
Cancel

Connect KDC to Computer

Using the USB cable included with the KDC, follow the directions below.

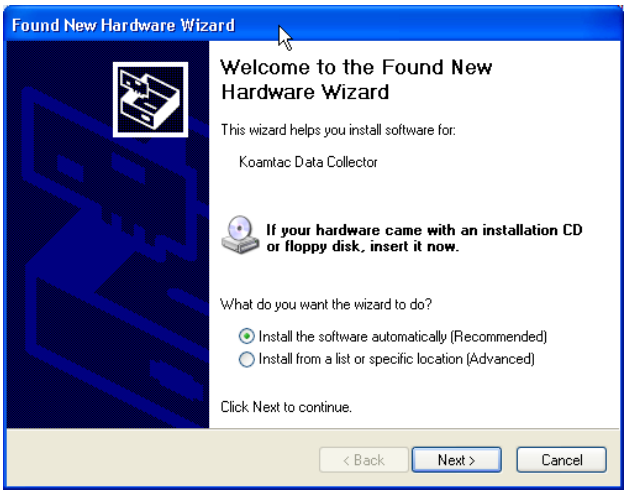
- Connect the cable's ultra mini USB connector to the KDC.
- Connect the cable's Type A USB connector to your PC.
- Wait until your computer beeps and/or displays the message Found *New Hardware.*

Found New Hardware Wizard

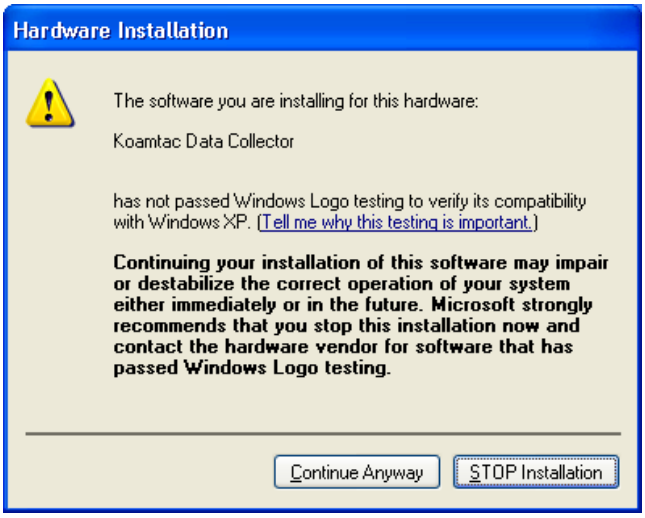
- Select "No, not this time" option in Found New Hardware Wizard and click Next if your PC pops up the following Found New Hardware Wizard.

Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
Windows will search for current and updated software by looking on your computer, on the hardware installation CD, or on the Windows Update Web site (with your permission).
Read our privacy policy
Can Windows connect to Windows Update to search for software?
Yes, this time only
Yes, now and every time I connect a device
No, not this time
Click Next to continue.
< Back
Next >
Cancel

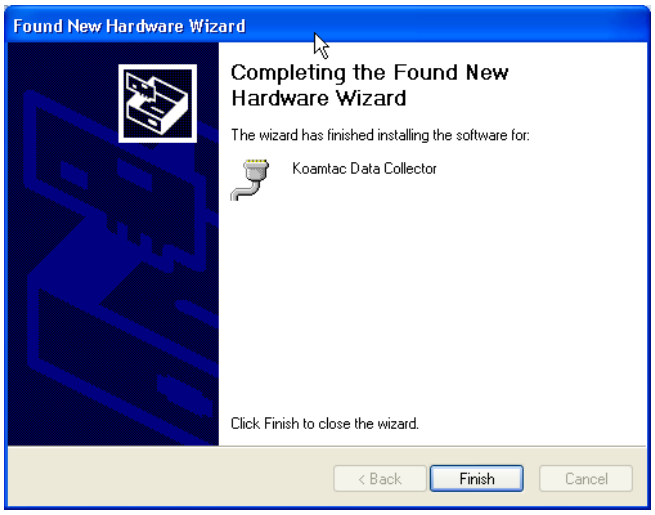
- Select "Install the software automatically (Recommended)" option in Found New Hardware Wizard and click Next if your PC pops up the following Found New Hardware Wizard.


Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
This wizard helps you install software for:
Koamtac Data Collector
If your hardware came with an installation CD or floppy disk, insert it now.
What do you want the wizard to do?
Install the software automatically (Recommended)
Install from a list or specific location (Advanced)
Click Next to continue.
< Back
Next >
Cancel

- Click **Continue Anyway** icon in Software Installation Logo testing window

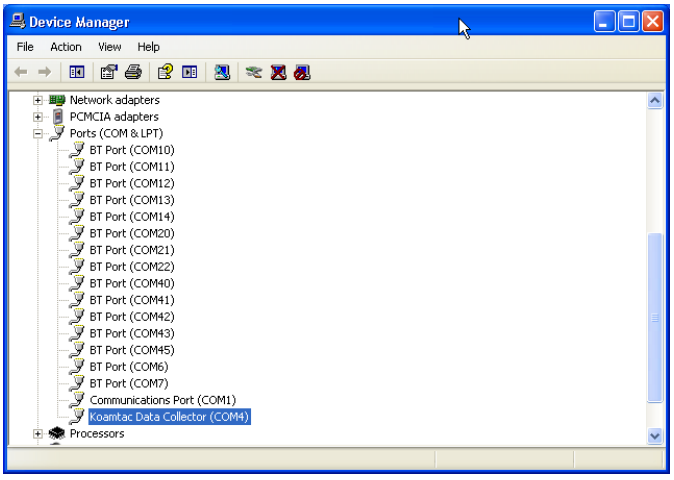

Hardware Installation
The software you are installing for this hardware:
Koamtac Data Collector
has not passed Windows Logo testing to verify its compatibility with Windows XP. (Tell me why this testing is important.)
Continuing your installation of this software may impair or destabilize the correct operation of your system either immediately or in the future. Microsoft strongly recommends that you stop this installation now and contact the hardware vendor for software that has passed Windows Logo testing.
Continue Anyway
STOP Installation

- Click **Finish** icon in Found New Hardware Wizard window



Verify COM Port Address

- User can verify installed COM Port in Device Manager



Vista and Windows 7

WARNING: ***DO NOT CONNECT KDC TO USB PORT PRIOR TO INSTALLATION***

1. Insert KoamTac Installation CD into your computer's CD drive.
2. Click **Start** icon then **My Computer** icon. A listing of devices on your computer will be displayed including the disk drive containing the KoamTac Installation CD.
3. Click on the KoamTac Installation CD icon then click on the Setup directory. Click on the PC_Setup.exe file which executes the KTSync Setup Wizard.

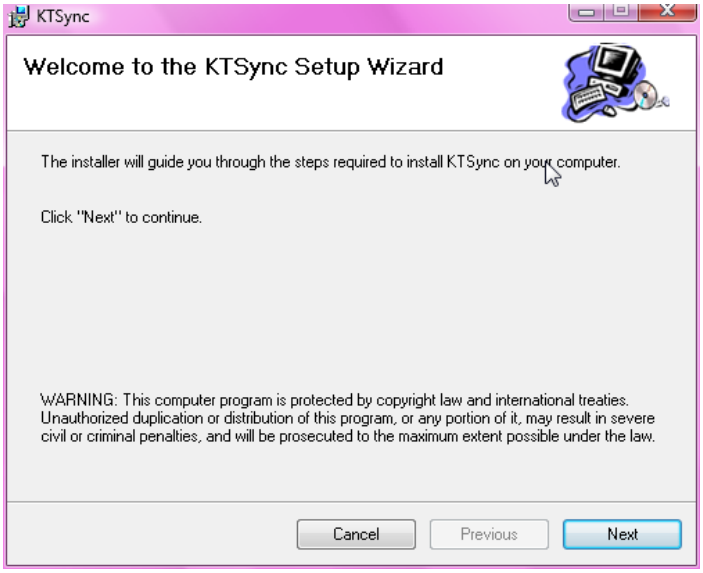
NOTES

- If KTSync Setup Wizard locates an older version of KTSync on your computer, you will be prompted to remove the older program before installing the new version. Select Remove KTSync then click Finish. When removal is complete, click Close. Go to Step 2 to run KTSync Setup Wizard.
- If you have any problems, please refer to the Manual Installation section.

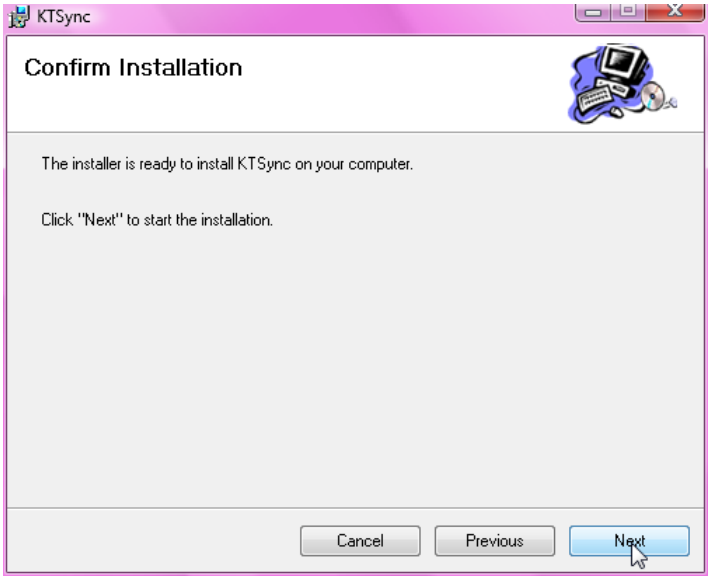
KTSync Setup Wizard

Below are the screen images you will see during the installation of KTSync.

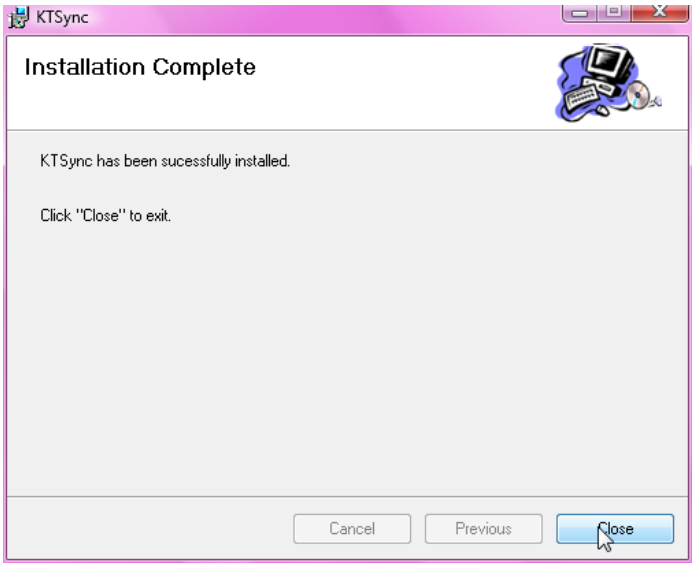
- Click **Next** icon in KTSync Setup Wizard window


KTSync
Welcome to the KTSync Setup Wizard
The installer will guide you through the steps required to install KTSync on your computer.
Click "Next" to continue.
WARNING: This computer program is protected by copyright law and international treaties. Unauthorized duplication or distribution of this program, or any portion of it, may result in severe civil or criminal penalties, and will be prosecuted to the maximum extent possible under the law.
Cancel
Previous
Next

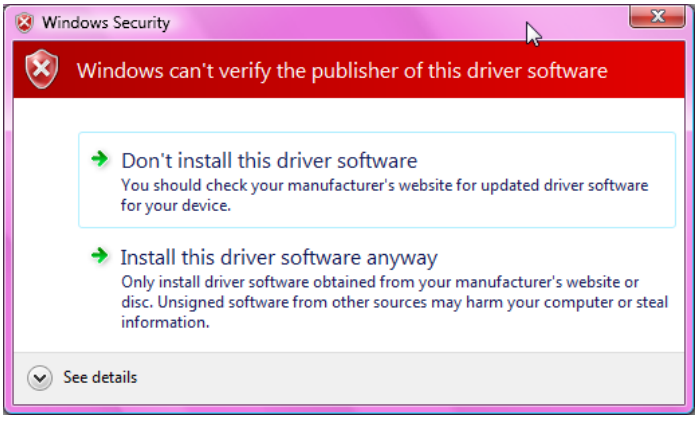
- Click **Next** icon in KTSync Confirm Installation window



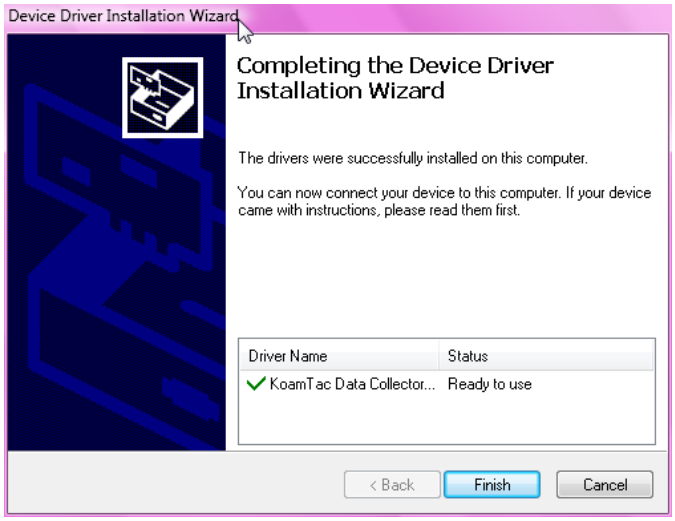
- Click **Close** icon in KTSync Installation Complete window and wait for Device Driver Installation Wizard



- **Click Install this driver software anyway** in Windows Security window


Windows Security
Windows can't verify the publisher of this driver software
Don't install this driver software
You should check your manufacturer's website for updated driver software for your device.
Install this driver software anyway
Only install driver software obtained from your manufacturer's website or disc. Unsigned software from other sources may harm your computer or steal information.
See details

- Click **Finish** icon in Device Driver Installation Wizard window


Device Driver Installation Wizard
Completing the Device Driver Installation Wizard
The drivers were successfully installed on this computer.
You can now connect your device to this computer. If your device came with instructions, please read them first.
Driver Name
Status
KoamTac Data Collector...
Ready to use
< Back
Finish
Cancel

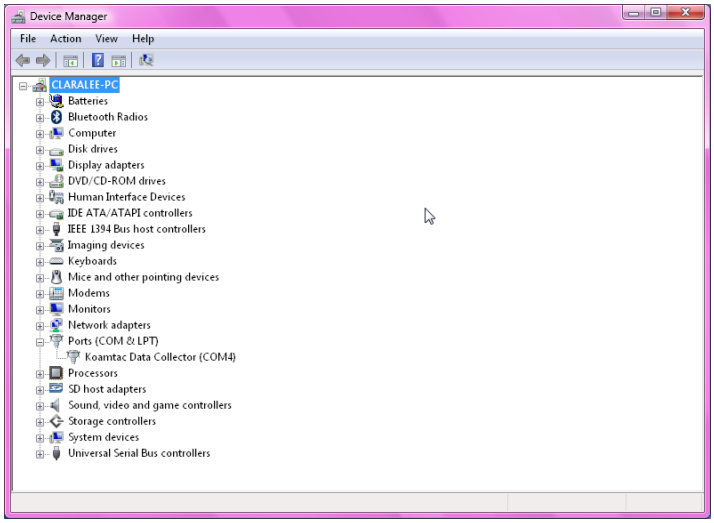
Connect KDC to Computer

Using the USB cable included with the KDC, follow the directions below.

- Connect ultra mini USB connector to the KDC.
- Connect Type A USB connector to your PC.
- Wait until your computer beeps and/or displays the message Found *New Hardware.*

Verify COM Port Address

- User can verify installed COM Port in Device Manager



2.2 Manual Installation

NOTE: ***If you have the KDC100, it has two ports, Ultra Mini and standard Type A which swings out. See Figure 2 for more details.***

Windows XP, Vista, and 7

1. Insert the KoamTac Installation CD into your computer's disk drive.
2. Create a directory called KoamTac on your computer.
3. Copy XP.Vista.7 directory from KoamTac CD to KoamTac directory. The XP.Vista.7 directory contains KTSync® programs for Microsoft® Windows XP, Vista, Windows 7 and user manuals.
4. Connect KDC cable to ultra mini USB connector on the KDC.
5. Connect KDC cable to Type A USB connector on your computer. Wait until your computer beeps and/or displays the message *New Hardware Found*. You will be prompted to search for a device driver for KDC.
6. Browse then select *KTReader.inf* file from the KoamTac directory created in Step 2. Follow screen prompts to continue with the device driver installation.

NOTE***: KTReader.inf is the device driver for 32bit Microsoft® Windows XP, Vista, and Windows 7. If you have a 64bit computer, use KTReader.inf file from XP.Vista.64bit folder in the KoamTac directory.***

3. OPERATING THE KDC

3.1 Getting Started

Attach Neck Strap to KDC

To prevent possible damage to the KDC, we ***strongly*** recommend wearing it around your neck by the included neck strap. Also, please don't swing KDC by the neck strap because contact with another object may cause it to malfunction or become damaged.

To attach the neck strap:

1. Fit the thin end of neck strap through the pillar of the KDC.
2. Loop the thick end of strap through the thin loop
3. Pull the strap tight to secure

Charge KDC Battery

Prior to using the KDC, you must charge its battery. To charge the battery, follow these directions.

1. Connect the KDC cable to the ultra mini USB connector on the KDC.
2. Connect the KDC cable to Type A USB connector on your computer.
3. Your KDC battery will begin charging. Within a few minutes, two small LEDs on the front panel will illuminate orange. When the battery is fully charged, the LEDs will illuminate green.

KDC100	***KDC200***	***KDC250/300***	***KDC400***
2 Hours	*2 Hours*	*4 Hours*	*5 Hours*

Table 2 – Approximate Time to Charge KDC Battery

Configure KDC

The KDC is designed to meet the data collection requirements of many different industries in a variety of dynamic situations. To perform well in these diverse environments, the KDC is designed to be configured easily and quickly. But, to perform at its maximum level, the KDC must be configured properly. Until you are familiar with configuring the KDC, it is recommended that you DO NOT modify the KDC settings. The KDC can be configured in three different methods which are explained in Section 3.3 – KDC Menus(KDC100/200/250/300 only), Chapter 4 –Synchronization, and Appendix C – Special Barcodes.

CONFIGURATION METHODS FOR THE KDC100/200/250/300

- KDC Menu
- KTSync® Software
- Special Barcodes

Figure 4 - Location of Scroll Buttons

CONFIGURATION METHODS FOR THE KDC400

- KTSync® Software
- Special Barcodes

3.2 Basics

Reading Barcodes

Reading a barcode is simple. Point the KDC at a barcode and press the scan button. Be sure to point the scan engine at the barcode, not at your face, and make sure to position the light beam on the barcode. If the barcode is scanned successfully, you will hear one beep and the LEDs will illuminate in green. The scanned barcode data will be displayed along with the scan time and battery level. *Depending on the configuration of your KDC, other information may also be displayed.*

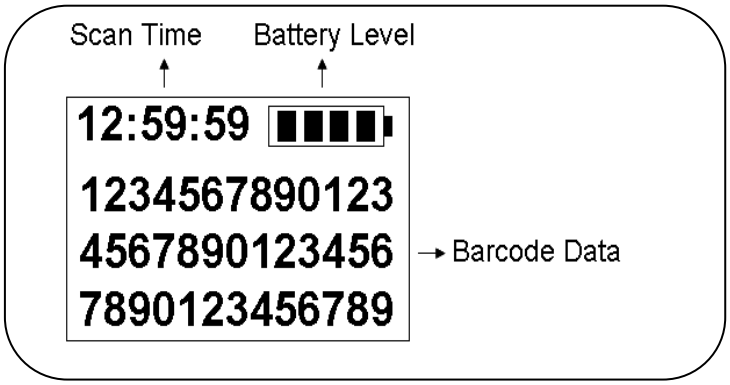


Figure 5 - KDC Display

If the scan was unsuccessful, you will hear two beeps, the LEDs will illuminate in red, and the message ***Failed reading…*** will display. If you have problems scanning a barcode, try the following suggestions while pointing the KDC at the barcode and depressing the scan button.

- Modify the angle of the KDC in relation to the barcode, making the angle bigger or smaller as needed.
- Modify the distance between the barcode and the KDC, moving closer or further away as needed.
- Check option settings defined in the KDC menu section and change options as needed.
- Check that the barcode's width does not exceed the light beam's width and vice versa.

Synchronizing Barcode Data to PC

Use the KTSync® program to synchronize barcode data from the KDC to your PC. Please refer to Chapter 4 for details.

3.3 KDC Menus

Top Menu	Sub Menu	Options	KDC100	KDC200	KDC250	KDC300
KDC Mode	Normal		Default	Default	Default	Default
	Application		Custom Application	Custom Application	Custom Application	Custom Application
View Data	View/Delete		View/Delete Data	View/Delete Data	View/Delete Data	View/Delete Data
Set Barcodes (100/200/250)	EAN13	Enabled/Disabled	Enable	Enable	Enable	N/A
	EAN8	Enabled/Disabled	Enable	Enable	Enable	N/A
	UPCA	Enabled/Disabled	Enable	Enable	Enable	N/A
	UPCE	Enabled/Disabled	Enable	Enable	Enable	N/A
	CODE39	Enabled/Disabled	Enable	Enable	Enable	N/A
	ITF14	Enabled/Disabled	Enable	Enable	Enable	N/A
	CODE128	Enabled/Disabled	Enable	Enable	Enable	N/A
	I2of5	Enabled/Disabled	Enable	Enable	Enable	N/A
	CODABAR	Enabled/Disabled	Enable	Enable	Enable	N/A
	GS1-128	Enabled/Disabled	Enable	Enable	Enable	N/A
	CODE93	Enabled/Disabled	Enable	Enable	Enable	N/A
	CODE35	Enabled/Disabled	Enable	Enable	Enable	N/A
	BooklandEAN	Enabled/Disabled	Disable	Disable	Disable	N/A
	EAN13withAddon	Enabled/Disabled	Disable	Disable	Disable	N/A
	EAN8withAddon	Enabled/Disabled	Disable	Disable	Disable	N/A
	UPCAwithAddon	Enabled/Disabled	Disable	Disable	Disable	N/A
	UPCEwithAddon	Enabled/Disabled	Disable	Disable	Disable	N/A
Set Barcodes (300)	1D Symbology	Codabar	N/A	N/A	N/A	Enable
		Code 11	N/A	N/A	N/A	Enable
		Code 32	N/A	N/A	N/A	Enable
		Code 39	N/A	N/A	N/A	Enable
		Code 93	N/A	N/A	N/A	Enable
		Code 128	N/A	N/A	N/A	Enable
		EAN-8	N/A	N/A	N/A	Enable
		EAN-13	N/A	N/A	N/A	Enable
		GS1 Composite	N/A	N/A	N/A	Enable
		I2of5	N/A	N/A	N/A	Enable
		Matrix 2of5	N/A	N/A	N/A	Enable
		MSI	N/A	N/A	N/A	Enable
		Plessey	N/A	N/A	N/A	Enable
		PosiCode	N/A	N/A	N/A	Enable
		GS1 Omni	N/A	N/A	N/A	Enable
		GS1 Limited	N/A	N/A	N/A	Enable
		GS1 Expanded	N/A	N/A	N/A	Enable
		S2of5 Ind	N/A	N/A	N/A	Enable
		S2of5 IATA	N/A	N/A	N/A	Enable
		TCL39	N/A	N/A	N/A	Enable
		Telepen	N/A	N/A	N/A	Enable
		Trioptic	N/A	N/A	N/A	Enable
		UPCA	N/A	N/A	N/A	Enable
		UPCE0	N/A	N/A	N/A	Enable
		UPCE1	N/A	N/A	N/A	Enable
	2D Symbology	AztecCode	N/A	N/A	N/A	Enable
		AztecRunes	N/A	N/A	N/A	Enable
		CodablockF	N/A	N/A	N/A	Enable
		Code16K	N/A	N/A	N/A	Enable
		Code49	N/A	N/A	N/A	Enable

		DataMatrix	N/A	N/A	N/A	Enable
		MaxiCode	N/A	N/A	N/A	Enable
		MicroPDF	N/A	N/A	N/A	Enable
		PDF417	N/A	N/A	N/A	Enable
		QRCode	N/A	N/A	N/A	Enable
		HanXin Code	N/A	N/A	N/A	Enable
	Postal Codes	Postnet	N/A	N/A	N/A	Enable
		PlanetCode	N/A	N/A	N/A	Enable
		UK Post	N/A	N/A	N/A	Enable
		Canada Post	N/A	N/A	N/A	Enable
		Kix Post	N/A	N/A	N/A	Enable
		Australia Post	N/A	N/A	N/A	Enable
		Japan Post	N/A	N/A	N/A	Enable
		China Post	N/A	N/A	N/A	Enable
		Korea Post	N/A	N/A	N/A	Enable
	OCR	OCR Off	N/A	N/A	N/A	Enable
		OCR A	N/A	N/A	N/A	Disable
		OCR B	N/A	N/A	N/A	Disable
		OCR USC	N/A	N/A	N/A	Disable
		OCR MICR	N/A	N/A	N/A	Disable
		OCR SEMI	N/A	N/A	N/A	Disable
Barcode Options (100/200/250)	CodaBar_NoStartStop Chars	Enabled/Disabled	Disable	Disable	Disable	N/A
	UPCE_as_UPCA	Enabled/Disabled	Disable	Disable	Disable	N/A
	EAN8_as_EAN13	Enabled/Disabled	Disable	Disable	Disable	N/A
	UPCE_as_EAN13	Enabled/Disabled	Disable	Disable	Disable	N/A
	ReturnCheckDigit	Enabled/Disabled	Disable	Disable	Disable	N/A
	VerifyCheckDigit	Enabled/Disabled	Disable	Disable	Disable	N/A
	UPCA_as_EAN13	Enabled/Disabled	Disable	Disable	Disable	N/A
	I2of5_VerifyCheckDigit	Enabled/Disabled	Disable	Disable	Disable	N/A
	Code39_VerifyCheckDigit	Enabled/Disabled	Disable	Disable	Disable	N/A
	I2of5_ReturnCheckDigit	Enabled/Disabled	Disable	Disable	Disable	N/A
	Code39_ReturnCheck Digit	Enabled/Disabled	Disable	Disable	Disable	N/A
	UPCE_ReturnCheckDigit	Enabled/Disabled	Enabled	Enabled	Enabled	N/A
	UPCA_ReturnCheckDigit	Enabled/Disabled	Enabled	Enabled	Enabled	N/A
	EAN8_ReturnCheckDigit	Enabled/Disabled	Enabled	Enabled	Enabled	N/A
	EAN13_ReturnCheckDigit	Enabled/Disabled	Enabled	Enabled	Enabled	N/A
Barcode Options (300)	Codabar	Tx StartStop(Enable/disable)	N/A	N/A	N/A	Disable
		Check Digit(DoNotVerify/VerfyDONotTX/VerifyDoTx)	N/A	N/A	N/A	DoNotVerify
		Concatenate(Disable/Enable/Required)	N/A	N/A	N/A	Enable
	Code39	Tx StartStop(Enable/disable)	N/A	N/A	N/A	Disable

		Check Digit(DoNotVerify/VerfyDONotTX/VerifyDoTx)	N/A	N/A	N/A	DoNotVerify
		Append(Enable/Disable)	N/A	N/A	N/A	Disable
		Full ASCII(Enable/Disable)	N/A	N/A	N/A	Disable
	I2of5	Check Digit(DoNotVerify/VerfyDONotTX/VerifyDoTx)	N/A	N/A	N/A	DoNotVerify
	Code11	Check Digit(2 digits/1 digit)	N/A	N/A	N/A	2 digits
	Code128	Concatenate(Disable/Enable)	N/A	N/A	N/A	Disable
	Telepen	Output(Original/AIM)	N/A	N/A	N/A	AIM
	UPCA	VerifyChkDgt(Enabled/Disabled)	N/A	N/A	N/A	Enable
		NumberSys(Enabled/Disabled)	N/A	N/A	N/A	Enable
		2DgtAddenda(Enabled/Disabled)	N/A	N/A	N/A	Disable
		5DgtAddenda(Enabled/Disabled)	N/A	N/A	N/A	Disable
		Req. Addenda(Enabled/Disabled)	N/A	N/A	N/A	Disable
		Sep. Addenda(Enabled/Disabled)	N/A	N/A	N/A	Enable
		Coupon Code(Enabled/Disabled)	N/A	N/A	N/A	Enable
	UPCE	Expand(Enabled/Disabled)	N/A	N/A	N/A	Disable
		Req. Addenda(Enabled/Disabled)	N/A	N/A	N/A	Disable
		Sep. Addenda(Enabled/Disabled)	N/A	N/A	N/A	Enable
		Check Digit(Enabled/Disabled)	N/A	N/A	N/A	Enable
		NumberSys(Enabled/Disabled)	N/A	N/A	N/A	Enable
		2DgtAddenda(Enabled/Disabled)	N/A	N/A	N/A	Disable
		5DgtAddenda(Enabled/Disabled)	N/A	N/A	N/A	Disable
	EAN-13	VerifyChkDgt(Enabled/Disabled)	N/A	N/A	N/A	Enable
		2DgtAddenda(Enabled/Disabled)	N/A	N/A	N/A	Disable
		5DgtAddenda(Enabled/Disabled)	N/A	N/A	N/A	Disable
		Req. Addenda(Enabled/Disabled)	N/A	N/A	N/A	Disable
		Sep. Addenda(Enabled/Disabled)	N/A	N/A	N/A	Enable

		ISBN Trans.(Enabled/Disabled)	N/A	N/A	N/A	Disable
	EAN-8	VerifyChkDgt(Enabled/Disabled)	N/A	N/A	N/A	Enable
		2DgtAddenda(Enabled/Disabled)	N/A	N/A	N/A	Disable
		5DgtAddenda(Enabled/Disabled)	N/A	N/A	N/A	Disable
		Req. Addenda(Enabled/Disabled)	N/A	N/A	N/A	Disable
		Sep. Addenda(Enabled/Disabled)	N/A	N/A	N/A	Enable
	MSI	Tx CheckChar(Enabled/Disabled)	N/A	N/A	N/A	Disable
	PosiCode	A and B/A&B LimitedA/A&B LimitedB	N/A	N/A	N/A	A&B LimitedB
	GS1	UPCEAN Ver.(Enabled/Disabled)	N/A	N/A	N/A	Disable
		GS1 Emulation(No Emulate/GS1 128 Emul/GS1 Emulate)	N/A	N/A	N/A	No Emulate
	PostNet	Tx CheckChar(Enabled/Disabled)	N/A	N/A	N/A	Disable
	PlanetCode	Tx CheckChar(Enabled/Disabled)	N/A	N/A	N/A	Disable
Scan Options	Scan Angle	Narrow/Wide	Wide	Wide	Wide	N/A
	Filter	Normal/High	Normal	Normal	Normal	N/A
	Time Out	.5 seconds to 10 seconds	2 second(s)	2 second(s)	2 second(s)	2 second(s)
	Min. Barcode Length	2 to 36 characters	4 chars	4 chars	4 chars	N/A
	Min. Barcode Length	2 to 48 characters	N/A	N/A	N/A	4 chars
	Security Level	1 to 4 level	2 level	2 level	2 level	N/A
	Image Capture	Enabled/Disabled	N/A	N/A	N/A	Disable
	Auto Trigger	Enabled/Disabled	Disable	Disable	Disable	Disable
	Reread Delay	Continuous, Short, Medium, Long, Extra Long	Medium	Medium	Medium	Medium
	Finger Trigger	Enabled/Disabled	Enabled	Enabled	Enabled	N/A
	Partial Display	Start Position	1	1	1	1
		No. of Char(s)	0 chars	0 chars	0 chars	0 chars
		Action	Select	Select	Select	Select
Data Process	Wedge / Store	Wedge Only				
		Wedge & Store Always	Default	Default	Default	Default
		Store Only				
		Save if Sent				
		Save if Not Sent				
	Data Format	Barcode only	Default	Default	Default	Default
		Packet Data				
	Data Editor/Prefix	Delete	Delete	Delete	Delete	Delete
	Data Editor/Suffix	Delete	Delete	Delete	Delete	Delete

	Data Editor/AIM ID	None/In Prefix/In Suffix	None	None	None	None
	Data Editor/Partial Data	Start Position	1	1	1	1
		No. of Char(s)	0 chars	0 chars	0 chars	0 chars
		Action	Select	Select	Select	Select
	Handshake	Enable/Disable	Disable	Disable	Disable	Disable
	Terminator	None, CR, LF, CR+LF, Tab	CR+LF	CR+LF	CR+LF	CR+LF
	Chk Duplicate	Enabled/Disabled	Disable	Disable	Disable	Disable
Bluetooth	Power	Enabled/Disabled	N/A	N/A	N/A	N/A
	Pairing	Pairing neighboring Bluetooth devices	N/A	N/A	N/A	N/A
	Auto Connect	Enabled/Disabled	N/A	N/A	N/A	N/A
	Auto Power On	Enabled/Disabled	N/A	N/A	N/A	N/A
	Auto Power On/Power Off Time	Disable, 1sec to 10second(s)	N/A	N/A	N/A	N/A
	Auto Power Off	Enabled/Disabled	N/A	N/A	N/A	N/A
	Auto Power Off/Beep Warning	Enabled/Disabled	N/A	N/A	N/A	N/A
	Auto Power Off/Power Off Time	1 to 30 minutes	N/A	N/A	N/A	N/A
	PowerOff Msg	Enabled/Disabled	N/A	N/A	N/A	N/A
	MAC Address	12 Characters *Bluetooth* MAC Address	N/A	N/A	N/A	N/A
	BT FW Version	v1.2.xrt Bluetooth Firmware Version	N/A	N/A	N/A	N/A
	Discovering	Discovering neighboring *Bluetooth* devices	N/A	N/A	N/A	N/A
	Connecting to	View Connect to *Bluetooth* device	N/A	N/A	N/A	N/A
	Wakeup Nulls	Enabled/Disabled	N/A	N/A	N/A	N/A
BT Config	ConnectDevice	SPP	N/A			
		HID iOS	N/A			
		iPhone	N/A	Default	Default	Default
		SPP2.0	N/A			
		HID normal	N/A			
	Auto Connect	Enabled/Disabled	N/A	Disabled	Disabled	Disabled
	Auto Power On	Enabled/Disabled	N/A	Disabled	Disabled	Disabled
	Auto Power On/Power Off Time	Disable, 1sec to 10second(s)	N/A	Disabled	Disabled	Disabled
	Auto Power Off	Enabled/Disabled	N/A	Enabled	N/A	Enabled
	Auto Power Off/Beep Warning	Enabled/Disabled	N/A	Enabled	Enabled	Enabled
	Auto Power Off/Power Off Time	1 to 30 minutes	N/A	5 minutes	5 minutes	5 minutes
	PowerOff Msg	Enabled/Disabled	N/A	Disabled	Disabled	Disabled
	MAC Address	12 Characters *Bluetooth* MAC Address	N/A			
	BT FW Version	Bluetooth Firmware Version	N/A			
	Wakeup Nulls	Enabled/Disabled	N/A	Disabled	Disabled	Disabled
	BT Toggle		N/A	Enabled	Enabled	Enabled

	HID AutoLock	Disabled,1,2,3,4,5,10,15 minutes	N/A	1 minutes	1 minutes	1 minutes
	HID Keyboard	English,German,French,Italian, Spanish	N/A	US	US	US
	HID Delay/Initial	Disabled, 1,2,3,5,10 secs	N/A	Disabled	Disabled	Disabled
	HID Delay/Inter char	Disabled,10, 20, 30, 50, 100msec	N/A	Disabled	Disabled	Disabled
	HID Ctrl Char	Disabled, Alt+Numpad, ^+Character	N/A	Disabled	Disabled	Disabled
BT Service	Power	Enabled/Disabled	N/A	Enabled	Enabled	Enabled
	Pairing	Pairing neighboring Bluetooth devices	N/A			
	Discovering	Discovering neighboring *Bluetooth* devices	N/A			
	Connecting to	View Connect to *Bluetooth* device	N/A			
	HID Sync		N/A			
GPS Config (250G)	GPS Power	Enabled/Disabled	N/A	N/A	Disabled	N/A
	Power Mode	Normal/Power Save	N/A	N/A	Normal	N/A
	Bypass Data	Enabled/Disabled	N/A	N/A	Disabled	N/A
	Acquire Test		N/A	N/A		N/A
	Reset GPS		N/A	N/A		N/A
System Config	Memory Size(3.0 only)	0.5/3.5, 1/3, 2/2, 3/1, 4/0	1M/3M	1M/3M	1M/3M	1M/3M
	Memory Status	No. of Stored Barcodes				
		Free Memory Available				
	Reset Memory	Memory(Empties Data)				
		Application Memory				
		BT Registry(KDC100 Not use)				
	Auto Erase	Enabled/Disabled	Disable	Disable	Disable	Disable
	Sleep Timeout	Disable, 1sec to 10minute(s)	5 second(s)	5 second(s)	5 second(s)	5 second(s)
	Auto PowerOff	Bluetooth, GPS, Pwr Off Time	N/A	N/A	Disabled/ Disabled/ 1 hour	N/A
	Date / Time	YYYY:MM:DD &				
		HH:MM:SS				
	Battery	% of Battery Charge Available				
	Version	Firmware Version & Serial No.				
	Button Lock	Enabled/Disabled	Disable	Disable	Disable	Disable
	Beep Sound	Enabled/Disabled	Enable	Enable	Enable	Enable
	Beep Volume	Low/High	High	High	High	High
	Auto Exit	Enabled/Disabled	Enable	Enable	Enable	Enable
	Port Status	Enabled/Disabled	Enable	Enable	Enable	Enable
	Display Format	Time & Battery / Type & Time / Type & Battery / Memory Status / GPS Data(KDC250 only)/Barcode Only	Time & Battery	Time & Battery	Time & Battery	Time & Battery
	Menu Barcode	Enable/Disable	N/A	N/A	N/A	Disable

	Scrolling	Enabled/Disabled	Enable	Enable	Enable	Enable
	Brightness	1 to 15 level(8 level)	8 level	8 level	8 level	8 level
	Factory Default	Restores Default Settings				

Table 3 - KDC Menu Options

KDC Mode Menu

The KDC Mode Menu has two options – Normal and Application modes.

- Normal: This is the default mode which provides basic barcode scanning. In Normal mode barcode data can be manipulated directly through the KDC or using KTSync® during the synchronization process.
- Application: This mode allows you to run the user application created by Application Generation Tool described in Chapter 5.

View Data Menu

This menu option allows you to view and/or delete barcodes stored in the KDC.

Set Barcodes Menu

This menu lists all the barcode symbologies supported by your KDC and allows you to select the barcode symbologies you will be scanning. For maximum scan performance, you should select only the symbologies you are scanning. Please refer to Appendix A.1 – Symbologies for a detailed listing of symbologies supported by your KDC.

Code Options Menu

Your KDC supports various Code Options including Transmission of Start and Stop Characters, Symbology Conversion, Verification of Optional Check Character, and Transmission of Check Digit. Please refer to Appendix A.2 for a detailed explanation of each option.

Scan Options Menu

- Scan Angle: Allows you to configure the laser beam angle to the barcode. Wide is 54^{o} and Narrow is 27^{o}. The default is Wide.
- Filter: Allows you to change the Filter mode from Normal to High for poor quality barcodes. The default is Normal.
- Timeout: Allows you to set the length of time before the KDC will stop scanning a barcode from .5 second up to 10 seconds. The default is 2 seconds.
- Minimum Barcode Length: Allows you to set a barcode length from 2 characters to 36 characters. It is strongly recommended that you maximize the minimum barcode length setting to prevent possible errors. The default is 4 characters.
- Security Level: Allows you to ensure an accurate barcode reading by setting the number of times

the KDC will read a barcode. Security Level is set from 1 up to 4. The higher security level means more reliable readings though some performance degradation is likely. For poor quality barcodes, we recommend increasing the security level. The default is 2.

- Auto Trigger: Allows users to scan a barcode automatically once Auto Trigger is enabled and USB cable is connected. User can adjust Reread delay from Continuous to Extra Long. Auto Trigger mode always enables duplicate check option.
- Partial Display: Allows you to display partial data. User defines the start position and number of characters to be displayed.

Data Process Menu

Wedge/Store - The KDC provides five modes of data transmission in keyboard wedging mode.

- Wedge Only: Barcode data is NOT stored in memory but transmitted to the host.
- Wedge & Store Only: Barcode data is stored in memory and transmitted to the host.
- Store Only: Barcode data is stored in memory but NOT transmitted to the host.
- Save if Sent: If data transmission is successful, barcode data is stored in memory.
- Save if Not Sent: If data transmission is NOT successful, barcode data is stored in memory.

Data Format - The KDC provides two data formats, Barcode Only and Packet Data.

- Barcode Only: KDC transmits scanned barcodes only. User may incorporate proper data transmission error detection and correction mechanism in this mode.
  - KDC supports various termination characters for barcode only format.
  - User can select <NONE>, <CR>, <LF>, <CR+LF> or <TAB> as the termination character.
- Packet Data: KDC transmits packet data with checksum to minimize transmission errors.
  - KTSync® sets Data Format to Packet Data format upon execution.
  - User may change Data Format to Barcode only if user prefers to use Barcode only mode but either KTSync program terminates abnormally or user disconnects KDC without exiting KTSync program normally.

Data Editor - KDC provides various data editing options.

- **Prefix** - Allows you to add a prefix to scanned data which can then be stored in KDC or wedged to the host. The Prefix format must be defined in the data format menu of KTSync. The maximum length for a Prefix is 11 characters.
  - ✓ **NOTE:** This Prefix option is different from the Prefix option in KTSync which appends the prefix to data during synchronization.
  - ✓ **NOTE:** User can also define prefix by scanning characters defined in Appendix C.14 ~ C.18 between following special barcodes

Prefix Enter Start

Prefix/Suffix Enter Finish

  - ✓ **NOTE:** User can also delete or display current prefix by scanning following special barcodes

Delete Prefix

Display Prefix

- **Suffix** - Allows you to add a suffix to scanned data which can then be stored in KDC or wedged to the host. The Suffix must be defined in the data format menu of KTSync. The maximum length for a Suffix is 11 characters.
  - ✓ **NOTE:** This Suffix option is different from the Suffix option in KTSync which appends the suffix to data during synchronization.
  - ✓ **NOTE:** User can also define suffix by scanning characters defined in Appendix C.18 ~ C.22 between following special barcodes

Suffix Enter Start

Prefix/Suffix Enter Finish

✓ **NOTE:** User can also delete or display current suffix by scanning following special barcodes

Delete Suffix

Display Suffix

- **AIM ID** - Allows you to add AIM ID to scanned data which can then be stored in KDC or wedged to the host. AIM ID must be defined in data format menu of KTSync. AIM ID is either added to the end of Prefix or Suffix.
- **Partial Data**: Allows you to store and/or transfer partial data. User defines the start position and number of characters to be stored and/or transferred.
  - Select the ***x*** characters from ***y*** position
    - Set Partial Data Start Position to ***y***, Partial Data Length to ***x,*** Partial Data Action to Select
    - Partial Data Length ***0*** means Select all characters from ***y*** position.
  - Erase the ***x*** characters from ***y*** position
    - Set Partial Data Start Position to ***y***, Partial Data Length to ***x,*** Partial Data Action to Erase
    - Partial Data Length ***0*** means Erase all characters from ***y*** position.

Handshake - KDC provides Handshake mode when Data Format is set to Packet Data.

- Handshake Mode will increase the reliability of barcode data transmission.
- The default mode for Handshake is Disabled.
- Data transmission speed is slower when Handshake Mode is Enabled.

Terminator – KDC supports various termination characters when the Data Format mode is set to Barcode Only. This option allows you to select <NONE>, <CR>, <LF>, <CR+LF>, or <TAB> as the termination character. The default terminator is <CR+LF>. Up/Down/Left/Right arrow terminator is also available for HID mode.

Chk Duplicate – This option allows you to prevent collecting duplicated data.

BT Service - KDC200/250/300/400

- Power
  - Enable or Disable Bluetooth Power
- Pairing Mode
  - KDC enters pairing mode so that host *Bluetooth* device can search KDC.
  - KDC exits pairing mode either by pressing the scan button or it fails to pair with *Bluetooth* host device in 90sec.
- Discovering
  - Search neighborhood *Bluetooth* devices
- Connecting To
  - Inquiry to registered *Bluetooth* devices
- HID Sync
  - KDC transmits all stored data to the host over HID profile if HID Sync option is enabled

GPS Config - KDC250

- GPS Power
  - Enable or Disable GPS Power
- Power Mode
  - Normal or Power Save
- Bypass Data
  - Enabled or Disabled
- Acquire Test
  - Acquiring time test of GPS signal
- Reset GPS
  - Reset GPS parameters

System Menu

- Memory Size (3.0 version only)
  - User can select normal data and application database memory partition size.
  - KDC will erase all stored data upon changing the partition size.
  - User should enter the following key sequence to change the partition.
  - <Up key> + <Up key> + <Down key> + <Down key> + <Scan button>
- Memory Status: Checks the number of stored barcodes and memory usage.
- Reset Memory: Resets KDC memory by erasing all stored barcodes, application and BT registry.
- Auto Erase: Erases all stored barcodes upon reaching buffer full condition if Enabled is selected
- Sleep Timeout: Sets amount of time KDC waits, when not being used, before going to *sleep.*
- Auto Power Off (KDC250 only)
  - Bluetooth: Enabled/Disabled
  - GPS: Enabled/Disabled
  - Power Off Time:0(Never), 5, 10, 20, 30, 60, 120 seconds
- Date/Time: Sets the date and time of KDC which can also be set using KTSync®
- Battery: Shows current status of battery power level.
- Version: Shows KDC firmware version and serial number.
- Button Lock: Locks or unlocks KDC scan and scroll buttons.
- Beep Sound: Enables or disables KDC beep sound.
- Beep Volume: High or low.
- Auto Exit: Enables KDC to automatically exit KDC Menus.
- Port Status: Enables or disables KDC port messages.
- Display Format: Selection of display format - Time & Battery, Type & Time, Type & Battery, Memory Status and Barcode only
- Menu Barcode: Enables or disables Honeywell special barcodes
- Scrolling : Enables or disables display scrolling for a barcode with more than 40 characters
- Brightness: Adjusts display brightness
- Factory Default: Resets KDC options to factory default settings.

3.4 LED Status

KDC100/200/250/300

LED Color	Status
Green	● Successful Reading ● USB is connected and battery is fully charged
Orange	● Low battery ● USB is connected and battery is charging
Red	● No reading ● Empty battery

KDC400

LED Color	Status
Green	● Successful Reading ● USB is connected and battery is fully charged ● iPhone mode
Orange	● Low battery ● USB is connected and battery is charging ● HID mode
Red	● No reading ● SPP mode

Table 4 - Explanation of LEDs

3.5 Empty Battery

The KDC will display the message ***Empty Battery Connect USB*** when the battery is empty. Please charge the KDC IMMEDIATELY to prevent data collecting interruption.

3.6 Buffer Full

The KDC will display the message ***Buffer Full*** when the size of collected data reaches 80KB or the number of collected barcodes is 10,240. To prevent the loss of data, you should synchronize the data then reset the memory when this message displays.

3.7 Reset Feature

The Reset feature lets you restart the KDC if necessary without losing any stored barcode data or option settings. To reset the KDC, follow these steps.

1. Press DOWN scroll button and SCAN button simultaneously for 5 seconds.
2. When the LEDs illuminate yellow, release the buttons.
3. The KDC initial screen, **KoamTac Data Collector KDC** displays when reset is complete.

Note:

> *The KDC stores collected data into flash memory and will not lose data or the KDC settings during the reset process.*

3.8 Replace Battery

KDC100 comes with a rechargeable, Lithium-Polymer battery. The battery is recharged from any USB port and can be recharged about 300 times before it needs to be replaced.

KoamTac recommends replacing the battery every six months as a declining battery will cause noticeable performance degradation in KDC100. Replacement batteries can be purchased from a KoamTac distributor. Batteries should be disposed of properly.

Step One - Place KDC100 face down on a firm surface. On the back, locate the small black screw in the middle of KDC. This screw secures the battery cover.

Step Two - Press a small Phillips head screwdriver firmly into the screw while simultaneously turning counterclockwise and loosen the screw. The battery cover will pop open. Remove the cover, keeping the screw intact. Store cover with screw in a safe place for later.

Step Three - ***Gently*** lift the battery to locate a wire connector underneath the battery. The wire connector is attached to the red and black wires on the battery. It is also attached to a connector on KDC. Remove the battery using a flat head screwdriver to disengage the connectors, being careful not to damage the connector on KDC.

Step Four – Use a small flat head screwdriver to reattach the new battery. Connect the white connector attached to the red and black wires on the replacement battery to the connector on the KDC. Gently press the battery down, fitting it inside the KDC. Replace the battery cover. With the Phillips head screwdriver securely tighten the battery cover screw.

Step Five – The replacement battery must be charged before KDC can be used.

4. SYNCHRONIZATION

When barcode data is collected, it must be uploaded to your application. KTSync®, which is bundled with the KDC, is software that allows barcode data to be uploaded to any PC, PDA, or smartphone running Android 2.1+, Apple iOS3.1.3+, Blackberry, Mac and Windows XP/Vista/7/Mobile 5.0+. It has three major functions. Windows XP/Vista/7 version supports all of the following features. Tablet, PDA and Smartphone versions support only limited features of PC KTSync.

- Synchronization - Provides data upload functionality to your applications.
- Keyboard Emulator - Allows scanned data to upload directly into your application as if the data were being entered manually on a keyboard.
- Application Generation - Allows user to create custom applications or download predefined applications such as Master-Slave, Pick/Bin, DB Lookup and Inventory.

Additional functions include:

- Prefix and Suffix add-ons to eliminate manual data entry.
- Symbology and Scan Option selections.
- Barcode Wedging options.

4.1 KTSync Menu

KTSync® was installed on your PC during the initial installation process. Before data can be uploaded to any host device, KTSync® must be launched on the host and configured to recognize the KDC. The following screen displays when KTSync® is launched.

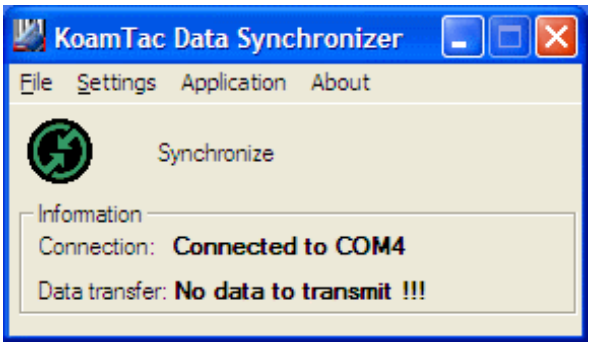


Figure 6 - KTSync® Synchronizer Menu

File Menu

- Connect: This option displays the Serial port (COM#) assigned to KDC. You can also use this option to manually assign the Serial port. The Serial port assigned to KDC can be found under Windows Device Manager. The port assignment is used by KTSync® for synchronizing data from the KDC to the host.
- Synchronize: This option manually tells the KDC to synchronize data with the host. While data is

being synchronized, KTSync menu options are unavailable. **NOTE: Please do not use your computer during data synchronization.**

- Bluetooth: This option is not available on KDC100.
- Exit: This option ends the KTSync program. You must re-run KTSync before you can synchronize data on the KDC.

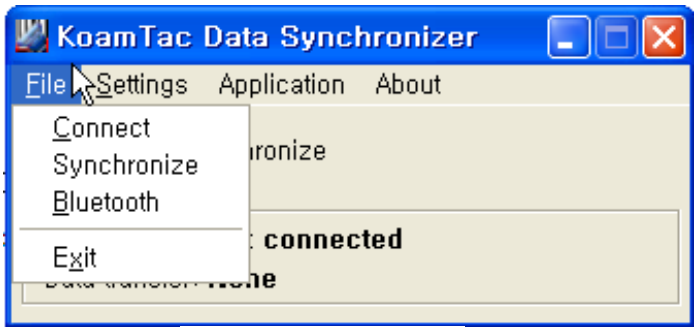


Figure 7 – File Menu

Settings Menu

- Synchronization: Select Synchronize options.
- Barcode & KDC: Select Barcode and KDC options.
- Others: Select Auto Connection and/or Synchronization Confirmation options.

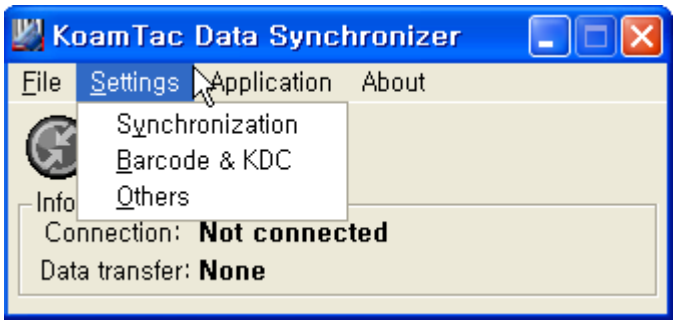


Figure 8 – Setting Menu

Application Menu

- Generation: Create user application or download predefined application.
- DB Lookup: Allows users to download DB into KDC and display barcode description field
- Master/Slave: User defines a master barcode for comparison with one or more slave barcodes
- Pick/BIN: User defines Pick ID and the barcode symbology for comparison with a defined Bin
- Inventory: Users can count inventories. Inventory description would be displayed if inventory DB is downloaded into KDC.

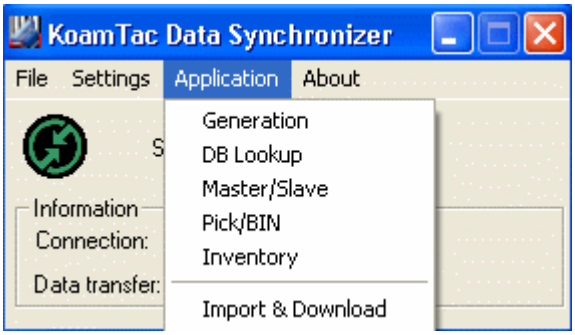


Figure 9 – Application Menu

About Menu - KTSync® - Version Information

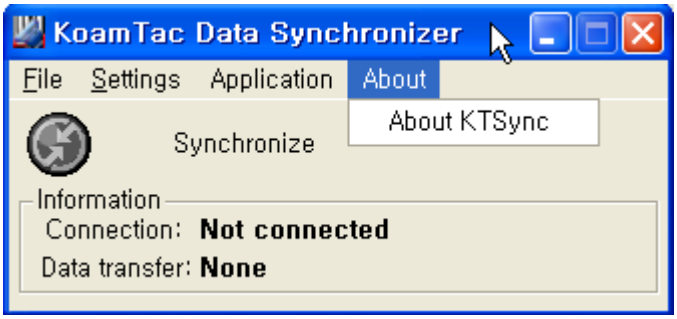


Figure 10 – About Menu

4.2 File Menu

Connect to KDC

The KDC connects to a COM port automatically when connected to your PC's USB port. **You can manually assign the KDC COM port using KTSync® Connection submenu under File menu if needed.**

Figure 11 - COM Port Selection for KDC

- The COM port assignment is found in the Windows Device Manager.
- KTSync® will not connect to the KDC if it is in KDC Menus. You must EXIT from the KDC Menus.
- If KTSync® fails to connect automatically to the KDC, please follow these directions.

1. Exit KTSync®.
2. Check that you have connected the KDC to a USB port on your PC.
3. Make sure to use the cable provided with the KDC.
4. Check that the KDC is not in KDC Mode Menu.
5. Restart KTSync®.

NOTE: You can manually assign the COM port using KTSync® Connect option under the File menu.

Synchronize

Under the File Menu, this option allows you to manually synchronize data on KDC with host. This option is similar to clicking on the Synchronize button in the KoamTac Data Synchronizer box.

4.3 Synchronization Settings

KTSync® provides several synchronization options for synchronizing data from your KDC to host devices such as your PC, PDA, or smartphone running Windows XP, Vista, Windows 7, or Mobile 5.0+.

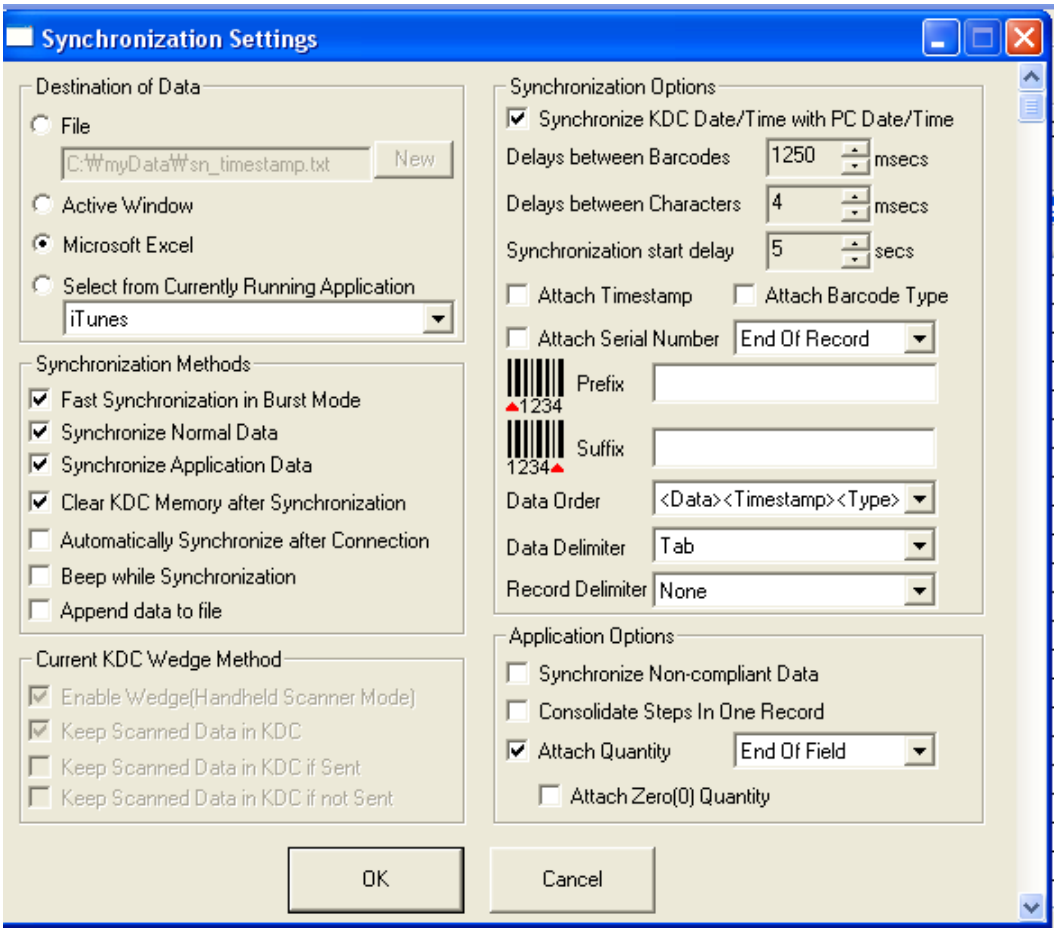


Figure 12 - KTSync® Synchronization Settings

Destination of Data

When barcode data is uploaded to the host device, you must assign a destination for the data. Destination of Data options include:

- File - This option means data will be saved in the assigned filename. You can select a different target directory by clicking the New icon. C:\MyData\sn_timestamp.txt is the default directory. If this directory is not created, you will be prompted to create it before data can be uploaded to a file.

- Active Window - This option means scanned barcode data is sent directly to the active program running on your device as if the data was being entered directly from a keyboard.
- Microsoft Excel - This option means barcode data is being imported directly into Microsoft's Excel. Various parameters can be set when uploading data to Excel.

- Select from Current Running Application – This option allows you to select a currently running application for data synchronization.

Note:

> - Data synchronization begins immediately if *Automatically After Connection* is selected. If not selected, data synchronization is started manually by the user.
> - Users **SHOULD NOT** operate the PC during the synchronization process. It can interrupt the process causing unreliable results.

Synchronization Methods

Fast Synchronization in Burst Mode

The KDC can synchronize data to a host device in Burst mode or Sequential mode. Burst mode provides the fastest synchronization process but could result in error in a poor *Bluetooth* environment. Fast synchronization in burst mode is only recommended with USB connection.

Synchronize Normal Data

The KDC will synchronize Normal Data only in KDC memory if Synchronize Normal Data option is selected. If you want all data in KDC memory synchronized, you should select Synchronize Normal Data **and** Synchronize Application Data.

Synchronize Application Data

The KDC will synchronize Application Data only in KDC memory if Synchronize Application Data option is selected. If you want all data in KDC memory synchronized, you should select Synchronize Normal Data **and** Synchronize Application Data.

Clear KDC Memory after Synchronization

The stored barcode data is cleared from the KDC memory after synchronization if this option is selected. The KDC can store a total of 10,240 barcodes or 80KB(86 version)/180KB(85 version) of barcode data.

- It is important to clear the KDC memory periodically to prevent Buffer Full message which will prevent the KDC from storing additional data.
- Stored barcode data can also be deleted using the Reset Memory feature on the KDC.

Automatically Synchronize after Connection

This option lets you automatically synchronize collected data to your computer immediately when the

KDC is connected to the host.

- IMPORTANT: Remember to configure all options properly before selecting this option.
- Data synchronization can be done manually by clicking the synchronize icon if this option is not selected.

Beep while Synchronization

You can enable or disable the beep tone during the synchronization process. A beep is sounded each and every time barcode data is synchronized if this option is selected. The KDC beeps 5 times when the synchronization process is complete.

Append data to File

KTSync would append data to the exiting file instead of creating a new file if user has specified file name and Append data to File option is enabled.

Current KDC Wedge Method

The KDC can be configured in one of five Wedge/Store modes -

- Wedge Only - Scanned data is transmitted to the host. The KDC does not store scanned data.
- Wedge & Store - Scanned data is stored in the KDC and transmitted to the host.
- Store Only - Scanned data is stored in the KDC but NOT transmitted to the host.
- Save if Sent - Scanned data is stored in the KDC ONLY if transmission to the host is successful.
- Save if Not Sent - Scanned data is stored in the KDC ONLY if transmission to the host is unsuccessful.

Enable Wedge (Handheld Scanner Mode) - This option will be checked if Wedge Only or Wedge & Store option is selected.

Keep Scan Data in KDC - This option will be checked if Store Only or Wedge & Store option is selected.

Synchronization Options

Synchronize KDC Time with PC Time when Connected

This option enables you to synchronize the KDC date and time with the host date and time. Synchronization of date and time occurs after the data is uploaded to the host device.

Delays

You can set transmission delays between barcodes and characters during the synchronization process. It is important to set proper delays to prevent errors during the transmission of collected barcodes. Some Windows applications such as Excel require longer delay times.

Attachments

Timestamp, Barcode Type, and Serial Number can be attached to the scanned barcode by selecting these options. The Serial Number of the KDC can be attached to the Start or End of Record.

Prefix and Suffix

- Enter the characters you want appended to the front (Prefix) or back (Suffix) of the barcode in the Prefix and Suffix fields.
- The character set is any combination of ASCII characters including alphanumeric, line feed (“\n”), and carriage return (“\r”).

Order and Delimiter

- Select Order of Data – Type, Data, and Timestamp
- Select the Delimiter between Data – Tab, Space, Comma, and Semicolon
- Select the Delimiter between Records – None, LF, CR, Tab, and <LF & CR>

Application Options

Synchronize Non-Compliant Data

The KDC will synchronize both compliant and non-compliant data (filtered data) if Synchronize Non-Compliant Data option is Enabled.

Consolidate Steps in One Record

KTSync will consolidate the data collected in Step 1 with the data collected in Step 2 and/or Step 3. Data will be consolidated into one record instead of individual data records for each step when Consolidate Steps in One Record is Enabled. Non-complete records, i.e. three steps were defined but data was only collected for two steps; would be discarded if this option is Enabled.

Attach Quantity

Quantity would be attached to the left or right of the data if this option is Enabled.

4.4 Barcode & KDC Settings

KTSync® allows you to configure the KDC Scan Options and Barcode Settings. The configuration options for the KDC using KTSync® are similar to the Set Barcodes, Code Options, Data Editing and Scan Options on the KDC Menu. Please refer to Appendix A for proper barcode settings for your application.

NOTE: You must configure barcode and scan options properly for optimal KDC performance.

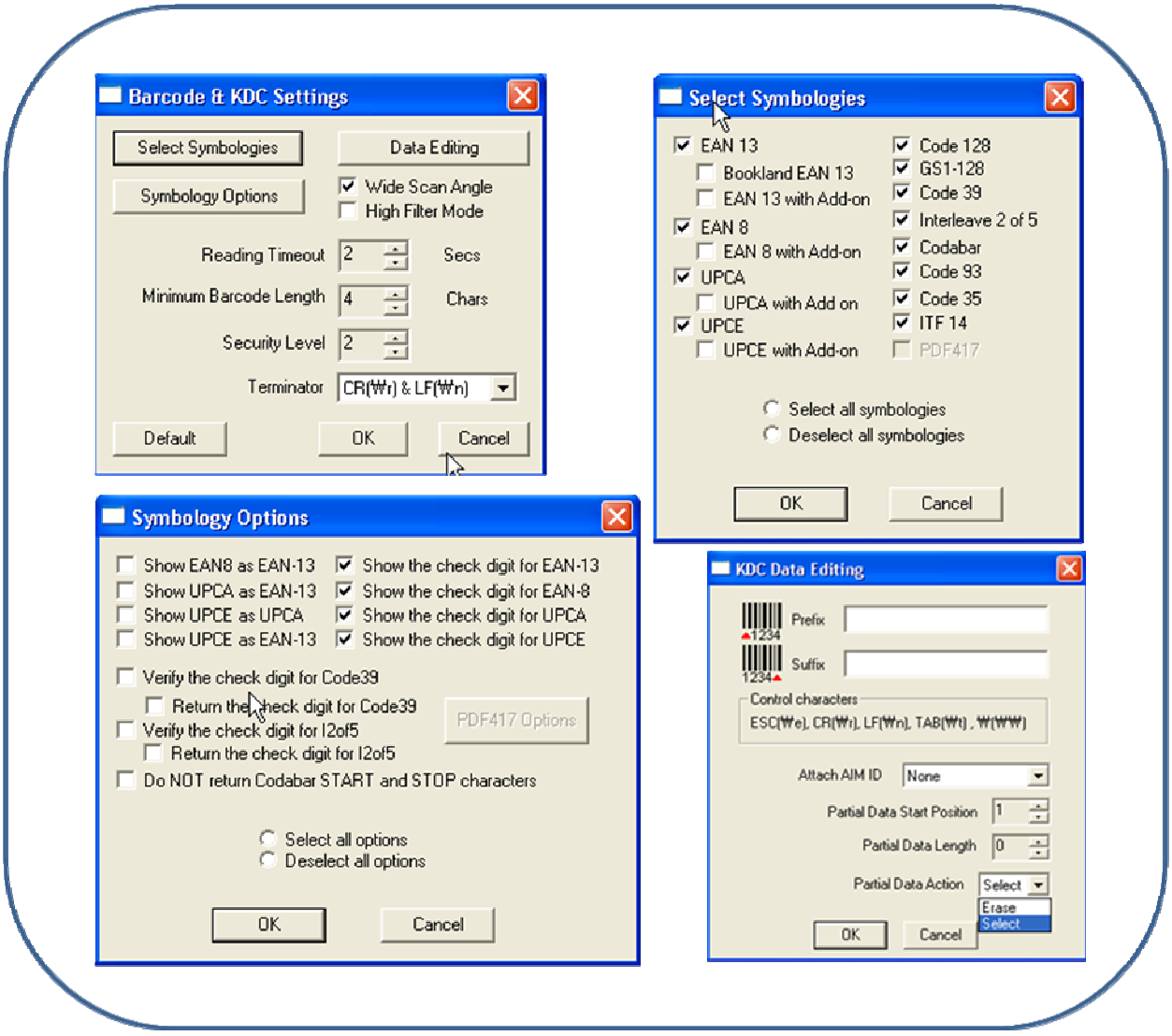


Figure 13 - Barcode & KDC Settings, Symbologies, Data Editing and Scan Options

Select Symbologies and Symbology Options

The process for scanning and reading barcodes is delicate and complicated. Although your KDC is equipped with a high performance scan engine, if configured incorrectly it may not perform at its peak performance level. To ensure its high performance, the KDC comes configured to optimize its scan engine technology. Unless you clearly understand the impact of your changes to the KDC settings, please do not change factory default settings. Please refer to Appendix A for details. Pressing the Default icon will reset all symbology related options to factory default settings.

Data Editing Option

Prefix - Allows you to add a prefix to scanned data which can then be stored in KDC or wedged to the host. The Prefix format must be defined in the data format menu of KTSync. The maximum length for a Prefix is 11 characters. **NOTE:** This Prefix option is different from the Prefix option in KTSync which appends the prefix to data during synchronization.

Suffix - Allows you to add a suffix to scanned data which can then be stored in KDC or wedged to the host. The Suffix must be defined in the data format menu of KTSync. The maximum length for a Suffix is 11 characters. **NOTE:** This Suffix option is different from the Suffix option in KTSync which appends the suffix to data during synchronization.

AIM ID - Allows you to add AIM ID to scanned data which can then be stored in KDC or wedged to the host. AIM ID must be defined in data format menu of KTSync. AIM ID is either added to the end of Prefix or Suffix.

Partial Data: Allows you to display and store partial data. User defines the start position and number of characters to be displayed and stored.

- Select the ***x*** characters from ***y*** position
  - ✓ Set Partial Data Start Position to ***y***, Partial Data Length to ***x,*** Partial Data Action to Select
  - ✓ Partial Data Length ***0*** means Select all characters from ***y*** position.
- Erase the ***x*** characters from ***y*** position
  - ✓ Set Partial Data Start Position to ***y***, Partial Data Length to ***x,*** Partial Data Action to Erase
  - ✓ Partial Data Length ***0*** means Erase all characters from ***y*** position.

4.5 Others Settings

Other options under the Settings menu allows you to select four additional settings.

- **Ask Confirmation before Trying Auto Connection** prevents unintentional launch of KTSync.
- **Ask Confirmation before Starting Auto Synchronization** prevents unintentional synchronization of data.
- **Minimize KTSync on Start** will minimize KTSync and send to the tray upon execution.
- **Keep Checking *Bluetooth* Connection** allows reconnection of KDC once *Bluetooth* signal is detected. This feature is useful when moving from *Bluetooth* host device frequently. KTSync will automatically reconnect *Bluetooth* connection when you enter an effective *Bluetooth* network range. *(Not Available on KDC100)*

To select any of these settings, click on the box to the left of the setting. A check mark (√) will display next to the setting to indicate that it is selected.

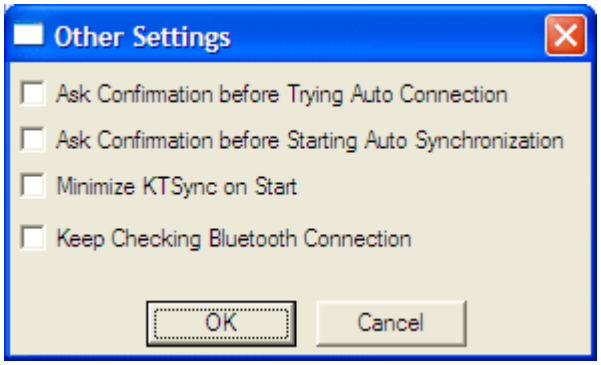


Figure 14 - KTSync® Confirmation Settings

5. APPLICATION GENERATION

[NOTE] KDC FW2.85.100.x doesn't support the Application Generation feature. Users should upgrade FW2.85.100.x to FW2.86.100.x to use Application Generation feature

When you select Application menu from the KTSync, you can choose from the following five Applications – Generation, DB Lookup, Master/Slave, Pick/BIN, and Inventory. User can also download saved programs using Import & Download option.

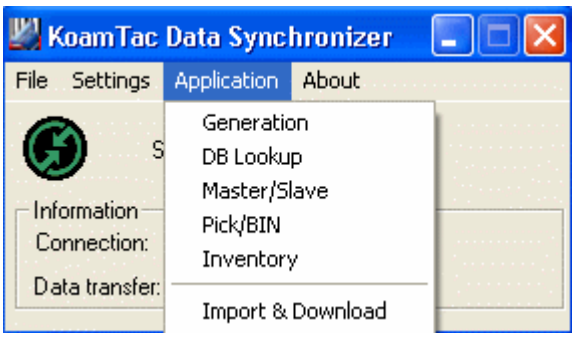


Figure 15 – Application Menu

When the Application tool is selected, the KDC will beep once to acknowledge a connection between the KDC and the Application tool. KTSync would popup the following warning window if downloaded application in KDC doesn't match with KTSync application tool.

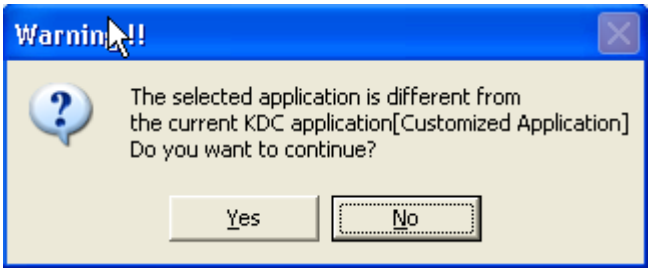


Figure 16 – Application Warning Window

[Note] KDC would wedge barcode data to the host in application mode if "wedge and store always" option in data process menu is selected and KDC firmware version is higher than 2.86.xxx.G.

5.1 Application Generation

KDC Application Generation tool is a robust feature that allows you to create custom applications for collecting and managing barcode data. To create a custom application, select the Generation submenu from the Application menu in KTSync®.

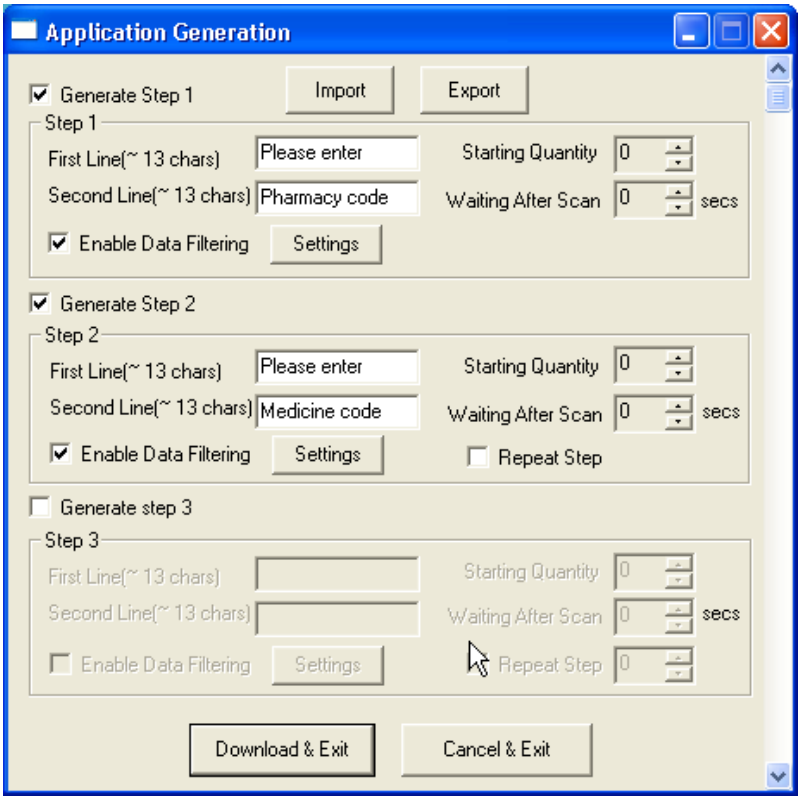


Figure 17 – Application Generation Menu

Generate Application

Generate step 1 - To generate a custom application, click on the Generate Step 1 box which enables you to define the user prompts and data collection settings for Step 1 of your custom application. Below is a description of each field. These prompts are the same when selecting Generate step 2 and Generate step 3. **NOTE: Your custom application can include only Step 1**.

- **First line**

  Enter up to 13 characters which will display on the first line of the KDC

- **Second line**

  Enter up to 13 characters which will display on the second line of the KDC

- **Starting quantity**

  Enter a predefined start quantity for each scanned barcode. The start quantity can be defined from 1 to 128 and is modifiable using up or down side key.

- **Waiting to scan**

  Enter the number of seconds the KDC pauses before the user prompts display. During this timeout period, the user can modify the quantity. If this field is set to zero, the quantity field cannot be adjusted. This field can be defined from "-1" to "30" seconds. "-1" second enables infinite waiting of user quantity input.

- **Enable data filter**

  Click on this box to enable the data filtering option. Data filtering allows you to predefine different aspects of the barcode data you are collecting.

Data Filter Settings

When you select Enable data filtering, you must click on the Settings box to select the Data filter setting. The option for the data filter settings are the same for Step1, Step 2, and Step 3.

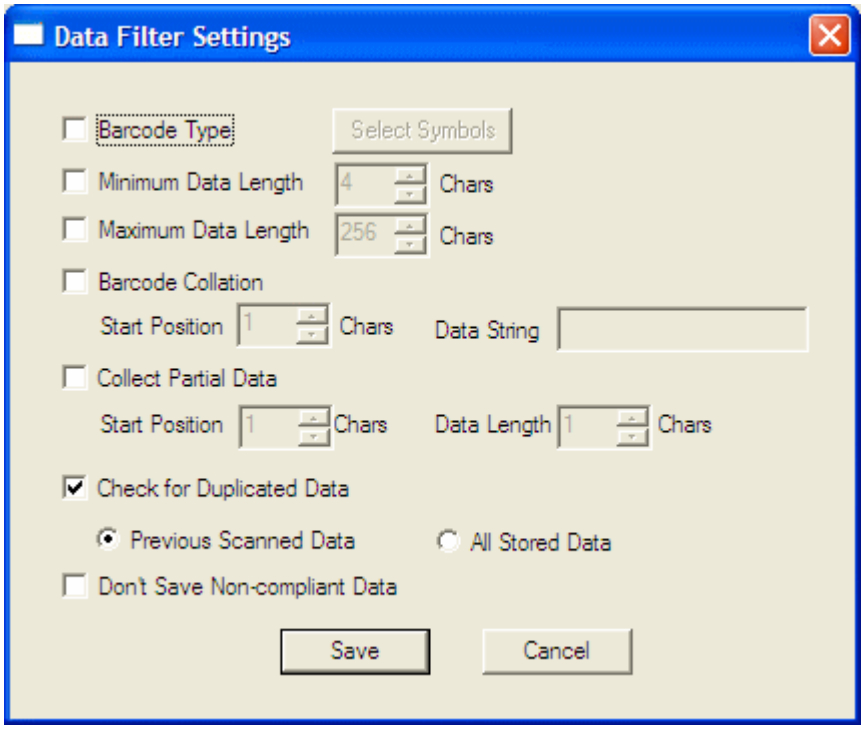


Figure 18 – Data Filter Settings

- **Barcode Type**

  This field allows you to select the type of barcodes the KDC will collect. When you click on the box, Select Symbols is enabled. A listing of the symbologies supported by the KDC displays. To select a barcode symbology, click on the box associated with the symbology.

- **Minimum Data Length**

  This field allows you to define the minimum length of the scanned barcode. The length can be between 2 and 36 characters. If a user scans a barcode whose length is less than the defined length, the barcode data is not collected.

  [Note] The default KDC minimum barcode length defined in scan option is 4. Therefore, users should change KDC minimum barcode length to 2 or 3 to define minimum data length to 2 or 3.

- **Maximum Data Length**

  This field allows you to define the maximum length of a scanned barcode. The defined length can be between 2 and 256 characters. If a user scans a barcode whose length is greater than the defined length, the barcode data is not collected.

  [Note] The default KDC minimum barcode length defined in scan option is 4. Therefore, users should change KDC minimum barcode length to 2 or 3 to define maximum data length to 2 or 3.

- **Barcode Collation**

  This option enables you to define a data string that the KDC will use to compare scanned barcodes.
  - Starting Position – This is the start position of the scanned barcode data to be compared with the defined data string.
  - Data String – This is the defined value to be compared with scanned barcode data. This value can be up to 32 characters

- **Collect Partial Data**

  This option allows you to define partial barcode data to be collected when a barcode is scanned. Only the partial data will be stored in the KDC.
  - Start position – This is the starting position that the KDC will use when collecting scanned barcode data.
  - Data Length – This is the length of partial data to be stored by the KDC

- **Check for Duplicated Data**

  This option allows you to prevent collecting duplicated data.
  - Previous Scanned Data – This option allows you to compare the scanned barcode with the previously scanned barcode and treat it as non-compliant data if you scanned the same barcode twice.
  - All Stored Data – This option allows you to compare the scanned barcode with stored barcode data and treat it as non-compliant data if the same barcode already scanned and

stored.

- **Don't Save Non-Compliant Data**
  This field tells the KDC how to manage non-compliant data based on the defined data filtering fields. If this field is enabled, non-compliant data is NOT stored in the KDC. If this option is not enabled, non-compliant data is stored.

Generate step 2

To include another step in your data collection process, click the box, Generate step 2. This step has the same options as Step 1. In this step, you have the option of repeating step 2 by clicking the box, Repeat Step. NOTE: This field is disabled when your application has three steps.

Generate step 3

To include a third step, click the box, Generate step 3. This step has the same options as step 1 and 2. However, in this step you have the option to repeat steps 2 or 3.

Application Download and Execution

Prior to running your application, it must be downloaded to KDC.

- Click "Download" icon from Application Generation Window.
- Change KDC from Normal mode to Application mode.
  - Press two side buttons simultaneously to enter menu mode
  - Select KDC mode and enter scan button
  - Change to Application mode
  - Save and exit from menu mode
- KDC will run in normal mode if you don't change to Application mode after downloading the application.

5.2 Predefined Applications

KTSync provides four Predefined Applications – Master/Slave, Pick/Bin, DB Lookup and Inventory.

Master/Slave

Master/Slave predefined application allows you to define a ***master*** barcode for comparison with one or more ***slave*** barcodes. The predefined application can be run once or continuously and within either setting, you can define a substring for comparison of master and slave barcodes.

- **Master/Slave Onetime**
  Define one ***master*** barcode and compare it with one ***slave*** barcode.
- **Master/Slave Continuous**
  Define one ***master*** barcode and compare it with multiple ***slave*** barcodes.
- **Collation Options**
  Works in either Onetime or Continuous Mode to compare a substring within the master and slave barcodes.

  - ✓ Master start position - Select the numeric position of start substring character in Pick barcode, 1 to 255
  - ✓ Slave start position - Select the numeric position of start substring character in Pick barcode, 1 to 255
  - ✓ Comparing Barcode Length - Number of characters to be compared, 0 to 255. 0 means all characters.

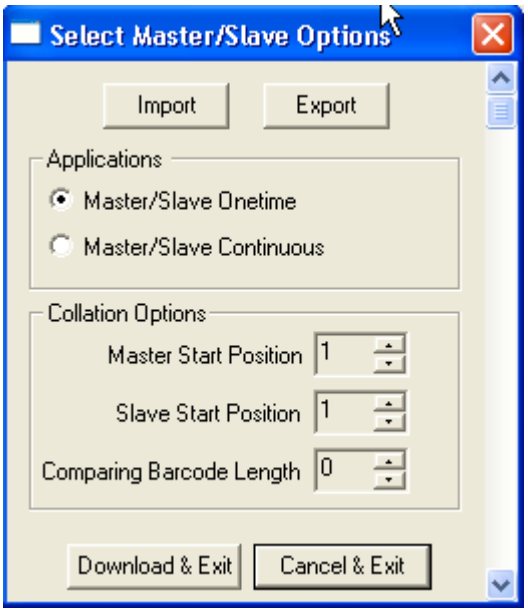


Figure 19 – Master/Slave Application Settings

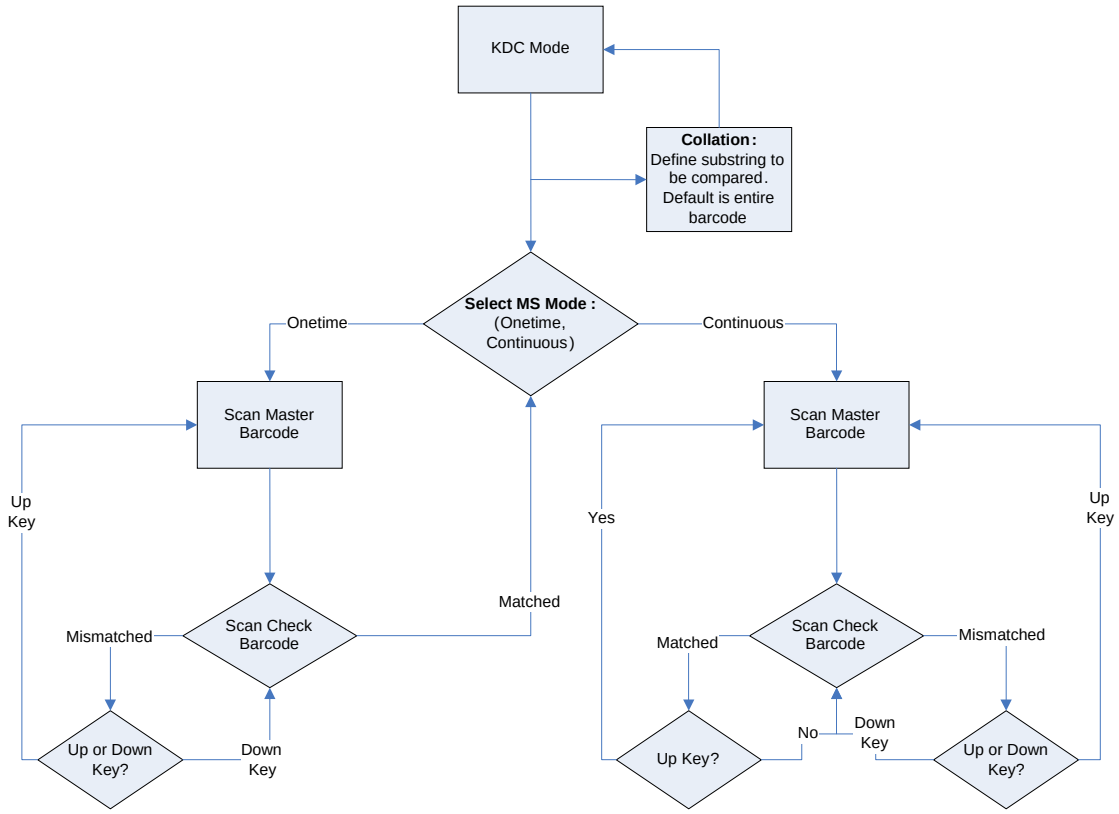


Figure 20 – Master/Slave Application Flow Chart

Pick/Bin

The Pick/Bin predefined application is a special version of the Master/Slave predefined application. The Pick/Bin application allows you to define Pick ID and the barcode symbology for comparison with a defined Bin.

- **Number of ID and Symbology**

  Define Pick ID characters from 1 to 32 and the barcode symbology.

- **Pick Start Position and Symbology**

  Select numeric position of start substring character in Pick barcode from 1 to 255 and the barcode symbology.

- **Bin Start Position and Symbology**

  Select the numeric position of start substring character in Bin barcode from 1 to 255 and the barcode symbology.

- **Comparing Barcode Length**

  Select the number of characters to be compared from 0 to 255. 0 means all characters.

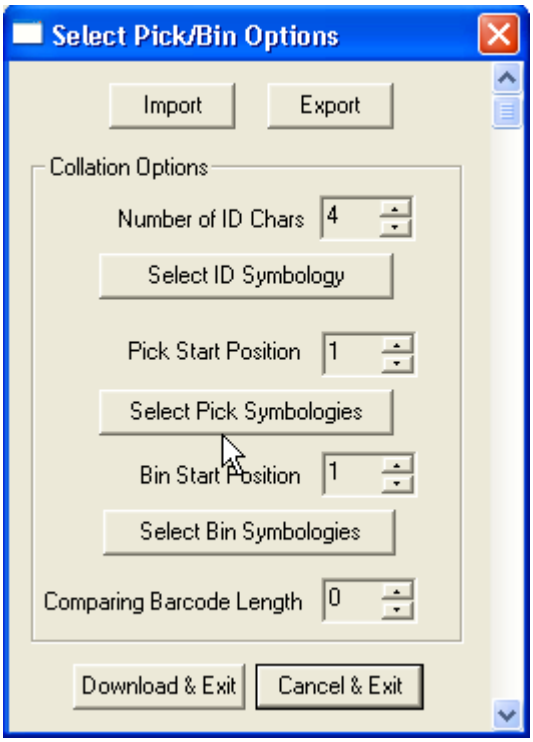


Figure 21 – Pick/BIN Application Menu

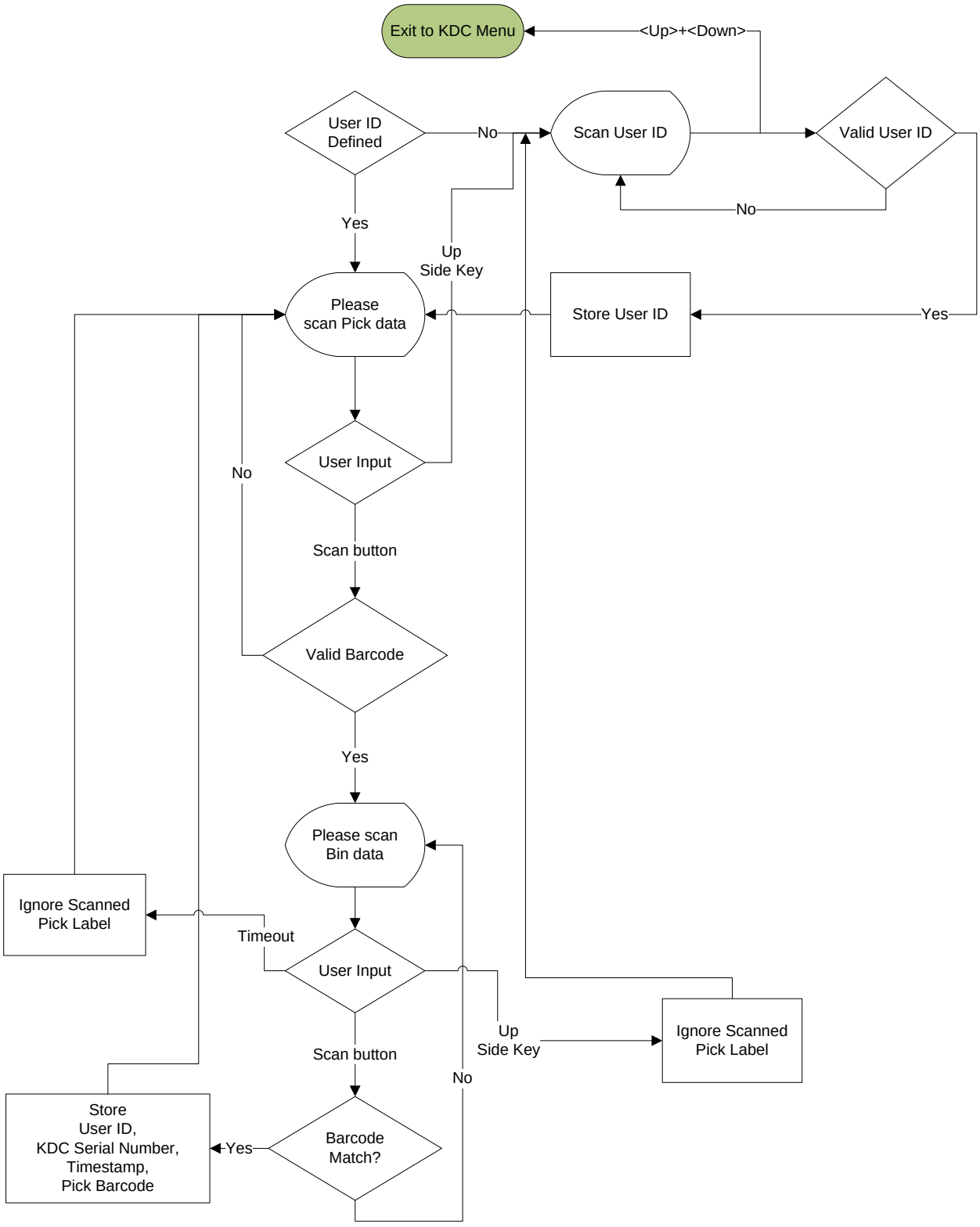


Figure 22 – Pick/BIN Application Flow Chart

DB Lookup Application

The DB Lookup application allows you to download a database to the KDC which can then be utilized for advanced AUTO-ID applications like displaying additional data after scanning a barcode. For example, using our DB Lookup application, you could download a product database including information such as description, price, and stock quantity. With the advanced data functionality built-in to the KDC, you could easily display product price, description, and stock level after the product's barcode is scanned.

Functionality of DB Lookup Application

- The database size cannot exceed 800 records.
- The maximum record size is 128 bytes.
- Each record can have up to 4 fields including the barcode which is the primary key.
- The maximum field size is 39 characters.
- Quantities can be entered by pressing the UP or DOWN scroll buttons after DB fields displayed.
- Quantity can be 1 to 128.
- User can create a database using Microsoft Excel.
    - Excel file must be saved as .txt.
    - Records should be separated by CR/LF
    - Fields should be separated by TAB.
    - Database should end with CR/LF.
    - Last 4 bytes of database should be CR/LF/CR/LF.

DB Lookup Fields and Settings

- **Download DB to KDC -** Downloads user created database to KDC.
- **Starting Quantity -** Enter predefined start quantity for each scanned barcode. The start quantity can be defined from 1 to 128 and is modifiable using up or down scroll buttons.
- **Barcode Field -** Select the position of barcode field in database from 1 to 4.
- **Stored Barcode Start Position -** Select the numeric position of start substring character of barcode in database from 1 to 39.
- **Scanned Barcode Start Position -** Select the numeric position of start substring character of scanned barcode from 1 to 39.
- **Comparing Barcode Length -** Number of characters to be compared from 0 to 255 where 0 is all characters.
- **Display on KDC -** Define database fields to be displayed on KDC. KDC can display one to three fields. KDC will display one field in two or three lines if same field is specified in line entering option.

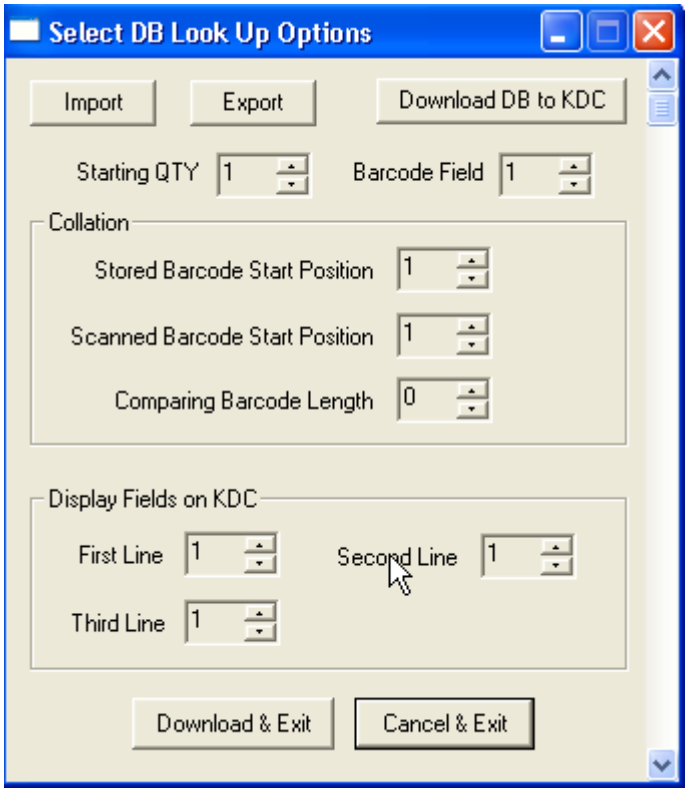


Figure 23 – DB Lookup Application Menu

Inventory Application

The Inventory application allows you to count inventories by scanning inventory barcodes. This application will increase inventory item count if the same item is scanned. Users can also download an inventory database to the KDC. KDC will display inventory description after scanning a barcode if inventory DB is downloaded.

Functionality of Inventory Application

- The inventory cannot exceed 800 items.
- The maximum record size is 128 bytes.
- Each record can have up to 4 fields including the barcode which is the primary key.
- The maximum field size is 39 characters.
- Quantities 1 to 32786 can be entered by pressing the UP or DOWN scroll buttons after inventory is scanned.
- Starting Quantity can be 1 to 128.
- Min/Max. Data Length is between 2 to 256 (KDC100/200) or 4 to 256 (KDC300)
- Barcode Collation Start Position is between 1 to 256
- The length of Collation Data String is between 1 to 30
- Collect Partial Data Start Position is between 1 to 256
- Collect Partial Data Length is between 1 to 256
- Users can create an inventory database using Microsoft Excel.
    - Excel file must be saved as .txt.
    - Click User Inventory DB option to display inventory description
    - Click Do not add non-existing item into DB if one do not wish to add new items into inventory DB
    - The number of Barcode Data Field is between 1 to 4
    - The position of Display Filed is between 1 to 4

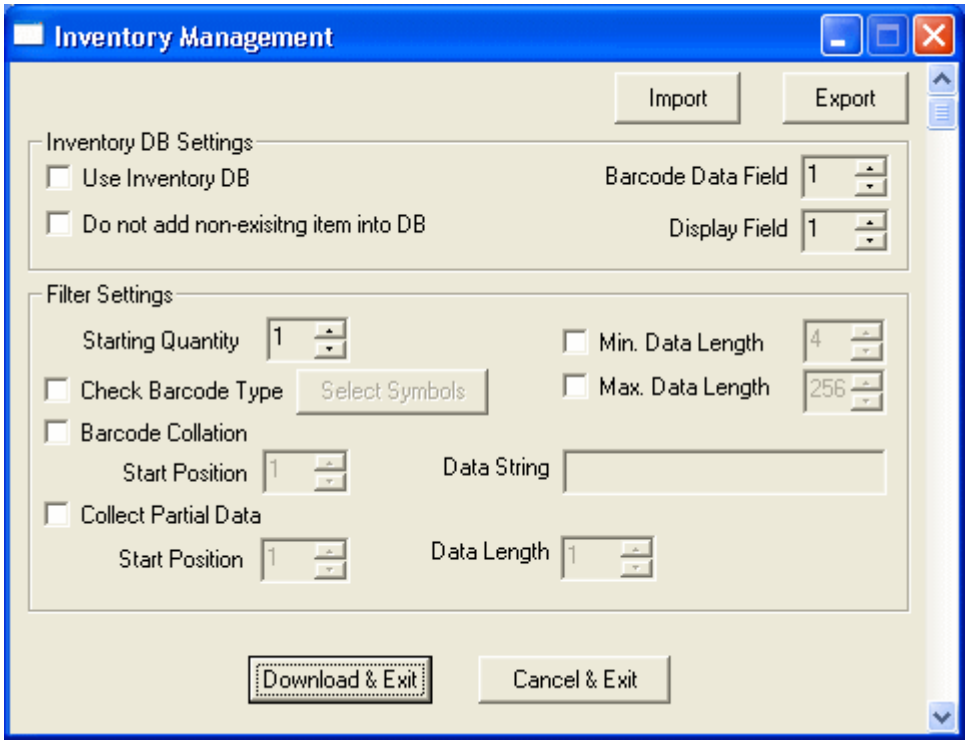


Figure 24 – Inventory Application Menu

6. Troubleshooting

PROBLEM	CAUSE	SOLUTION
KDC not working	Dead battery	● Charge battery by connecting KDC to your PC using the included cable
	Hardware failure	● Contact distributor for technical support
KDC not charging	Bad battery	● Replace battery – Contact Local Distributor
	Poor USB port	● USB port doesn't supply proper current to KDC - Charge KDC using a different USB port on your PC
Failed reading	Damaged barcode	● Scan a different barcode
	Out of scan range	● Move the scanner closer to barcode ● Move scanner farther from the barcode
	Incorrect angle	● Change the angle of scanner to barcode
	Symbology not supported	● Contact KoamTac - www.koamtac.com for possibility of custom symbology support
	Scan options	● Check scan option settings
	Dirty scan window	● Clean scan window
	Damaged scan window	● Replace scan window
KDC reads wrong barcode	Dirty scan window	● Clean scan window
	Damaged scan window	● Replace scan window
	Poor quality barcode	● Select only necessary barcodes ● Increase minimum barcode length ● Increase security level
Can't communicate with PC, PDA, or smartphone	USB cable is not connected properly	● Check cable connection between KDC and host device
	Software is not working properly	● Reload the software
	COM configuration	● Check COM port configurations
LED blinks yellow	Low battery power	● Charge the battery by connecting KDC to PC. ● KDC will lose collected data if the battery is empty.
Buffer Full Message	Full Memory	● Clear the Memory using Synchronization program
Empty Battery Message	Empty battery	● Connect USB immediately. ● Synchronize the collected data and charge KDC
Abnormal KTSync Operation on DELL PC	Quickset Utility	● Disable Quickset Utility before using KTSync. ● Dell Quickset utility interrupts normal KTSync operation
	WSED Utility	● Disable WSED Wireless enable/disable utility ● delete the folder C:\Program Files\WSED, which contains a file WSED.exe, with the same icon as in the taskbar ● Delete the registry entry KEY_LOCAL_MACHINE \SOFTWARE\Microsoft\Windows\CurrentVersion\Run\WSED

Table 5 - Troubleshooting Techniques

7. Warranty

LIMITED WARRANTY AND DISCLAIMERS

BY OPENING THE PACKAGE OF THIS PRODUCT YOU AGREE TO BECOME BOUND BY THE LIABILITY AND WARRANTY CONDITIONS AS DESCRIBED BELOW.

UNDER ALL CIRCUMSTANCES THIS MANUAL SHOULD BE READ ATTENTIVELY, BEFORE INSTALLING AND OR USING THE PRODUCT.

Serial Number

A serial number appears on the KDC label. This official registration number is strictly related to the device purchased. Make sure that the serial number appearing on your KDC is not removed. Removing the serial number will affect the warranty conditions and liability disadvantageously, so please maintain the label with serial number on the KDC. Units with the serial number label removed should not be operated.

Warranty/Warranty Period/Liability

KoamTac, Inc. (“KoamTac”) manufactures its hardware products in accordance with industry-standard practices. Unless otherwise agreed in a contract, KDC is warranted for a period of one year after purchase, covering defects in material and workmanship except rechargeable battery. KoamTac will repair or, at its opinion, replace products that prove to be defective in material or workmanship under proper use during the warranty period. KoamTac will not be liable in cases (i) in which the unit has been repaired or altered unless done or approved by KoamTac, (ii) in which the unit has not been maintained in accordance with any operating or handling instructions supplied by KoamTac, (iii) in which the unit has been subjected to unusual physical or electrical stress, misuse, abuse, power shortage, negligence or accident or (iv) in which the unit has been used other than in accordance with the product operating and handling instructions. Preventive maintenance is the responsibility of the customer and is not covered under this warranty. Under no circumstance will KoamTac be liable for any direct, indirect, consequential or incidental damages arising out of use or inability to use either the hardware or software, even if KoamTac has been informed about the possibility of such damages.

Warranty Coverage and Procedure

During the warranty period, KoamTac will repair or replace defective products returned to KoamTac warehouse. International customers should contact the local KoamTac office or support center. If warranty service is required, KoamTac will issue a Return Material Authorization Number. Products must be shipped in the original or comparable package, shipping and insurance charges prepaid. KoamTac will ship the repaired or replacement product freight and insurance prepaid. Customer accepts full responsibility for its software and data including the appropriate backup thereof. Repair or replacement of a product during warranty will not extend the original warranty term.

CAUTION: Changes or modifications not expressly approved by the manufacturer responsible for compliance could void the user’s authority to operate the equipment.

8. CONTACT INFORMATION

CORPORATE HEADQUARTERS

116 Village Boulevard, Suite 200

Princeton, NJ 08540, USA

PH: 609-734-4335 FAX: 609-228-4373

email: support@koamtac.com

For more information, visit our website - www.koamtac.com

APPENDIX A - Barcode & Scan Options

The process for scanning and reading barcodes is delicate and complicated. Although your KDC is equipped with a high performance scan engine, if configured incorrectly it may not perform at its peak performance level. To ensure its high performance, the KDC comes configured to optimize its scan engine technology. Unless you clearly understand the impact of your changes to the KDC settings, please do not change factory default settings.

A.1 Symbologies

KoamTac's KDC products support most major barcode symbologies including 1D, 2D, Postal, and OCR-Fonts. Below is a list of the barcode symbologies supported by the KDC with respect to each models particular area of support. To ensure superior scan performance, remember to select only the required symbologies.

	KDC100/200/250/410/415	*KDC300/420/425*
1D Barcodes	EAN13, EAN8, UPCA, UPCE, Bookland EAN, EAN13 with Addon, EAN8 with Add-on, UPCA with Add-on, UPCE with Add-on, Interleave 2 of 5, ITF14, Code128, Codabar, GS1-128, Code39, Code93, & Code35	Codabar, Code11, Code32, Code39, Code128, EAN8, EAN13, GS1-128, I2of5, MSI, Plessey, PosiCode, GS1 DATABAR OMNI, GS1 Limited, GS1 Expanded, S2of5IA, S2of5ID, TLC39, Telepen, Trioptic, UPCA, & UPCE
2D Barcodes	*N/A*	AztecCode, AztecRunes, CodablockF,Code 16K, Code49, DataMatrix, MaxiCode, MicroPDF, PDF417, & QRCode and HanXin Code
Postal Barcodes	*N/A*	AusPost, CanadaPost, ChinaPost, JapanPost, KoreaPost, KixPost, Planet Code, Postnet (US), & UKPost
OCR Fonts	*N/A*	OCR-A, OCR-B, OCRUSCurrency, OCRMICRE13B, & OCRSEMIFONT

Table 6 - Symbologies Supported by KDC

Bookland EAN vs. EAN-13

Bookland EAN which includes ISBN, ISSN, and ISMN, is supported by the KDC. This group of symbologies is essentially an EAN-13 barcode with fixed prefixes; 977 for ISSN, 978 for ISBN, and 979 for ISMN. If EAN-13 and Bookland EAN are both enabled, Bookland EAN takes precedence. Bookland EAN does not have any options. The Bookland EAN barcode does not contain any groupings – that is, there are no hyphens or separators. Thus, the ISBN 957-630-239-0 is transmitted as 9576302390.

Add-on Symbologies

By default, the 2 or 5 digit add-on symbols with a UPCE, UPCA, EAN-8, and EAN-13 barcode is neither decoded nor transmitted. Transmission for these specific symbologies is enabled by setting the appropriate *withAddon* options. There are 4 *withAddon* options, one for each symbology:

- **UPCEwithAddon**
- **UPCAwithAddon**
- **EAN8withAddon**
- **EAN13withAddon**

The decoding of add-on symbols is typified by the following table, which explains the process for EAN-13 symbols.

Mode	Behavior	Value of flags	
		EAN13	EAN13withAddon
Auto-discrimination	If add-on symbol is present, then it is also decoded; otherwise only the EAN-13 symbol is decoded.	true	true
With add-on	Only EAN-13 barcodes with 2 or 5 add-on symbol are decoded.	false	true
Without add-on	The add-on symbol is ignored.	true	false

Table 7 - Add-on for EAN-13 Symbology

The add-on symbol is appended to the EAN-13 barcode. The process is similar for UPCE, UPCA, and EAN-8 barcodes. Note that all the UPCE, UPCA, EAN-8, and EAN-13 formatting and conversion options are in effect. The following table should help explain the effect of various options for EAN-8 barcode 12345670 + 12.

Barcode	EAN8_as_EAN13	EAN8_ReturnCheckDigit	EAN13_ReturnCheckDigit
1234567012	False	True	N/A
123456712		False	
00000123456712	True	N/A	false
000001234567012			true

Table 8 - Add-on for EAN-8 Symbology

The add-on symbol neither contains check digit nor a terminating guard band. Every effort has been made to reduce the decoding error; however, it is likely to decode a partial scan of a 5-digit add-on symbol as a 2-digit add-on symbol. It is strongly recommended that the minimum security level is set at 2 while decoding add-on symbols. Since the decoder takes a conservative view on the add-on symbols, it is likely that the add-on symbol will be missed in the auto-discrimination mode. Auto-discrimination mode should then be avoided.

A.2 Code Options

The KDC supports the following barcode options:

- Transmission of start and stop characters
- Reverse direction
- Symbology conversion
- Verification of optional check character
- Transmission of check digit

Transmission of Start and Stop Characters

For Codabar symbols you can choose not to transmit the start and stop symbols, the NOTIS Editing. By default, they are transmitted. Setting the field **CodaBar_NoStartStopChars** to true disables the transmission.

Reverse Direction

This option may be selected if direction oriented symbologies are selected such as Code35.

Symbology Conversion

By default the EAN-8, UPCE, and UPCA symbols are transmitted in their native format. It is possible to show them in a different format. You can choose to display UPCE symbols as either UPC-A or EAN-13 symbols, EAN-8 symbols as EAN-13 symbols, or UPC-A symbols as EAN-13 symbols. The following table shows the effect of setting various options.

Option	EAN-8	UPC-A	UPC-E	All others
EAN8_as_EAN13	Converted to EAN-13	No effect	No effect	No effect
UPCA_as_EAN13	No effect	Converted to EAN-13	No effect	
UPCE_as_EAN13	No effect	No effect	Converted to EAN-13	
UPCE_as_UPCA	No effect	No effect	Converted to UPC-A	

Table 9 - Symbology Conversion

Verification of Optional "Check Digit"

Code39 and Interleave 2 of 5 have an optional check digit, which, by default, is not verified. Their verification can be enabled by selecting the option **VerifyCheckDigit** to true or you can enable the verification for individual symbologies. If the check digit verification fails then the barcode is not transmitted.

Option Selected	Verify Code39 check digit	Verify I2of5 check digit
VerifyCheckDigit	Yes	Yes
Code39_VerifyCheckDigit	Yes	No effect
I2of5_VerifyCheckDigit	No effect	Yes

Table 10 - Verification of Optional "Check Digit"

Transmission of "Check Digit"

By default, the check digit – optional or mandatory – is not transmitted. Its transmission can be enabled for all symbologies by enabling **ReturnCheckDigit** option.

Option Selected	Is the check digit returned?					
	EAN-13	EAN-8	UPC-A	UPC-E	Code39	I2of5
ReturnCheckDigit	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
EAN13_ReturnCheckDigit	**Yes**	No effect	No effect	No effect	No effect	No effect
EAN8_ReturnCheckDigit	No effect	**Yes**	No effect	No effect	No effect	No effect
UPCA_ReturnCheckDigit	No effect	No effect	**Yes**	No effect	No effect	No effect
UPCE_ReturnCheckDigit	No effect	No effect	No effect	**Yes**	No effect	No effect
Code39_ReturnCheckDigit	No effect	No effect	No effect	No effect	**Yes**	No effect
I2of5_ReturnCheckDigit	No effect	No effect	No effect	No effect	No effect	**Yes**

Table 11 - Transmission of "Check Digit"

Resolution of Inconsistencies

Three types of inconsistencies could arise in the assignment of symbology options. The decoder has pre-defined strategies to resolve these inconsistencies: If **UPCE_as_EAN13** is true, then **UPCE_as_UPCA** is ignored.

If symbology conversion is selected but the target symbology is not enabled, then the decoder still outputs the symbol in the target symbology. For example, suppose UPC-E is enabled and **UPCE_as_EAN13** is true but EAN-13 is disabled. All UPC-E symbols will be shown as EAN-13 and EAN-13 options (if specified) will be applied. For the two symbologies that have optional check digits, Code39 and Interleave 2 of 5, the decoder will always transmit the check digit if the verification is disabled.

Verify Check Digit	Return Check Digit	Description
Disabled	Enabled or Disabled	Check digit is not verified but is transmitted
Enabled	Disabled	Check digit is verified but is not transmitted
Enabled	Enabled	Check digit is verified and is transmitted

Table 12 - Resolution of Inconsistencies

A.3 Miscellaneous Barcode Information

Height of a Linear Barcode

Industry standards suggest a height of either 6.5mm or 15% of the symbol length, whichever is greater. Symbols of less than recommended heights may cause recognition problems.

Check Characters

Yes, we recommend the use of check-characters in barcodes. Operating without check-characters is not safe and will lead to errors that are costly to correct. Using check-characters positively affects data integrity especially when character density is at the limits and/or image quality is not at its best.

Prevent Interleave 2 of 5 Partial Reading

A partial scan of an Interleave 2 of 5 symbol may decode and cause incorrect data to be read. To prevent partial scans on long symbols, you should include bearer bars. These are bars that run along the top and bottom edges of the barcode in the scanning direction. If a partial scan of the barcode occurs, the scanning beam will hit the bearer bar and will not decode. The bearer bar must touch the top and bottom of all the bars and must be at least 3 times as wide.

Another solution for the short scanning problem is to fix all Interleave 2 of 5 symbols to a set number of digits. Zeros can be used to pad the data to the set number of digits. The application program would then be set to only accept scans of the correct number of digits.

Finally, a check digit may be used. The Interleave 2 of 5 symbology has an optional check character which uses a weighted Modulo 10 scheme. The check character is the last character in the symbol and should be checked by the decoder and then transmitted with the data. Since Interleave 2 of 5 must always have an even number of digits, the leftmost character may need to be a zero when the check character is added. The standard check digit is calculated by assigning alternating 3,1,3,1… weights to respective data digits. These weights are then multiplied by their respective data digits and the products are summed. The check digit is the digit needed to be added to the sum to make it an even multiple of 10. An example would be if the sum of the products was 37, then the check digit would be 3.

Equation to Determining Potential Number of Stored Barcodes

The number of barcodes that can be stored in the KDC memory depends on the size of the barcodes.

Example: *If only UPCA barcodes are scanned and the check digit is not transmitted, then each barcode takes up 11 (barcode data) + 2 (added bytes) + 2 (length and type) + 4 (time stamp) = 19 bytes. The maximum number of UPCA barcodes that can be saved is 81,920/19 =4,311.*

If different length barcodes are mixed, then you cannot compute the maximum number of barcodes that can be stored.

Data Buffer Full

When the data buffer is full, the KDC displays a message, **Buffer Full**, ignoring any command to scan barcodes. You must reset the data buffer to continue data collection.

Appendix B – FAQ

B.1 Symbology

Q: What barcode symbologies are supported by the KDC100?

A: The KDC100 supports most major 1D barcode symbologies. Below is a list of the1D symbologies supported by the KDC100.

KDC300	***KDC100 / 200 / 250***
2D Barcodes	***1D Barcodes***
AztecCode, AztecRunes, Codablock, Code16K, Code49, DataMatrix, MaxiCode, MicroPDF, PDF417, and QRCode	EAN13 EAN8 UPCA UPCE Bookland EAN EAN13 with Add-on EAN8 with Add-on UPCA with Add-on UPCE with Add-on Interleave 2 of 5 ITF14 Code128 Codabar GS1-128 Code39 Code93 Code35
1D Barcodes	
Codabar, Code11, Code32, Code39, Code128, EAN8, EAN13, GS1-128, I2of5, MSI, Plessey, PosiCode, GS1 DATABAR OMNI, GS1 Limited, RSSExpand, S2of5IA, S2of5ID, TLC39, Telepen, Trioptic, UPCA, and UPCE	
Postal Barcodes	
AusPost, CanadaPost, ChinaPost, JapanPost, KoreaPost, KixPost, Planet Code, Postnet (US), and UKPost	
OCR Fonts	
OCR-A, OCR-B, OCRUSCurrency, OCRMICRE13B, and OCRSEMIFONT	

Table 13 - Symbologies Supported by KDC

B.2 Host Interface

Q: What interface ports are supported by the KDC100?

A: The KDC100 has two USB ports; an ultra mini USB and a standard Type A USB. These interfaces support USB-Serial.

B.3 Battery

Q: How long will the KDC100 battery last before it needs to be replaced?

A: The battery on the KDC100 can be charged at least 300 times before it needs to be replaced.

Q: How long does it take to charge the KDC100 battery?

A: It takes about 2 hours to fully charge the KDC100 from an empty battery status to a fully charged status.

Q: How many barcodes can a fully charged KDC100 scan?

A: The KDC100 can scan more than 10,000 barcodes when fully charged.

Q: How long will the KDC100 battery lasts in the sleep mode?

A: The KDC100 lasts more than one month in sleep mode.

Q: Can I replace the KDC100 battery?

A: Yes. The KDC100 has a separate compartment for the battery which can be opened easily with a screw driver. Contact your distributor for a replacement battery.

B.4 Memory

Q: How many barcodes can be stored in the KDC100?

A: KDC100 have basic 180KB data memory and optional 4MB extended memory. 180KB can store more than 10,000 UPC barcodes and 4MB can store more than 100,000 product database. FW86 version uses 100KB for database area and user data memory is 80KB.

Q: Can I download stored barcodes or wedge barcodes to my application?

A: Yes. KTSync® is keyboard wedging, application generation, DB look up and inventory program bundled with the KDC100/200/300 which supports host devices running on Android®, iPhone/iPad/iPod touch, Blackberry®, Windows® XP/Vista/7/Mobile5.0+.

B.5 Programming

Q: Can the KDC100 be programmed by a KoamTac partner?

A: Yes. KoamTac's Application Generation tool provides an enhanced programming environment for developing custom applications for the KDC.

1. KDC supports, at most, three step data collection processes including the ability to perform various data functionality features.
2. KDC's database lookup function provides enhanced data processes enabling the KDC to display database results with or without scanned barcode data.
3. KDC can display a message from Host enabling two way communications and a messaging application.

Q: Does KoamTac provide customization services for the KDC100?

A: Yes. Custom applications or projects can be developed by KoamTac engineers. This service is provided for an additional fee to KoamTac. For more information regarding this service, please contact KoamTac.

Q: Can a partner develop a PC application for the KDC100?

A: A software development kit for Windows® XP/Vista/7 is available on KoamTac support page. Mac® SDK would be available through KoamTac authorized distributors.

APPENDIX C - SPECIAL BARCODES

C.1 Set Symbologies (KDC100/200/250)

Enable EAN13

Disable EAN13

Enable EAN8

Disable EAN8

Enable UPCA

Disable UPCA

Enable UPCE

Disable UPCE

Enable Code39

Disable Code39

Enable ITF14

Disable ITF14

Enable Code128

Disable Code128

Enable I2 of 5

Disable I2 of 5

Enable Codabar

Disable Codabar

Enable EAN128

Disable EAN128

Enable Code93

Disable Code93

Enable Code35

Disable Code35

Enable Bookland EAN

Disable Bookland EAN

Enable EAN13 with Addon

Disable EAN13 with Addon

Enable EAN8 with Addon

Disable EAN8 with Addon

Enable UPCA with Addon

Disable UPCA with Addon

Enable UPCE with Addon

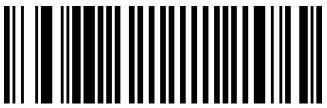
Disable UPCE with Addon

C.2 Barcode Options (KDC100/200/250)

Codabar - do NOT transmit start/stop

Codabar - transmit start/stop

Convert UPCE to UPCA



Do NOT convert UPCE to UPCA

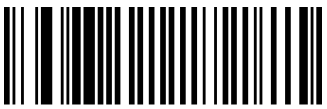
Convert EAN8 to EAN13

Do NOT Return Check Digit

Convert UPCE to EAN13

Do NOT Verify Check Digit

Return Check Digit



Do NOT convert EAN8 to EAN13

Verify Check Digit

Do NOT convert UPCE to EAN13

Convert UPCA to EAN13

3000080000

Do NOT Convert UPCA to EAN13

3100080000

Verify check digit for I2of5

3000400000

Do NOT verify check digit for I2of5

3100400000

Verify check digit for Code39

3000800000

Do NOT verify check digit for Code39

3100800000

Return check digit for I2of5

3004000000

Do NOT return check digit for I2of5

3104000000

Return check digit for Code39

3008000000

Do NOT return check digit for Code39

3108000000

Return check digit for UPCE

3010000000

Do NOT return check digit for UPCE

3110000000

Return check digit for UPCA

Do NOT return check digit for UPCA

Return check digit for EAN8

Do NOT return check digit for EAN8

Return check digit for EAN13

Do NOT return check digit for EAN13

C.3 Delete Last Scanned Barcode (KDC100/200/250)

C.4 Scan Options (KDC100/200/250)

Wide scan angle

3000004000

Narrow scan angle

3100004000

Normal filter mode

3100008000

High filter mode

3000008000

Auto Trigger Enable

5A001

Auto Trigger Disable

5A010

Continuous

5B000

Short

5B001

Medium

5B002

Long

5B003

Extra Long

5B004

C.5 Scan Timeout (KDC100/200/250)

Timeout = 500msec

Timeout = 1sec

Timeout = 2sec

Timeout = 3sec

Timeout = 4sec

Timeout = 5sec

Timeout = 6sec

Timeout = 7sec

Timeout = 8sec

Timeout = 9sec

Timeout = 10sec

C.6 Minimum Barcode Length (KDC100/200/250)

Minimum Length = 2

002

Minimum Length = 3

003

Minimum Length = 4

004

Minimum Length = 5

005

Minimum Length = 6

006

Minimum Length = 7

007

Minimum Length = 8

008

Minimum Length = 9

009

Minimum Length = 10

00A

Minimum Length = 11

00B

Minimum Length = 12

00C

Minimum Length = 13

00D

Minimum Length = 14

00E

Minimum Length = 15

00F

Minimum Length = 16

010

Minimum Length = 17

011

Minimum Length = 18

012

Minimum Length = 19

013

Minimum Length = 20

014

Minimum Length = 21

015

Minimum Length = 22

016

Minimum Length = 23

017

Minimum Length = 24

018

Minimum Length = 25

019

Minimum Length = 26

01A

Minimum Length = 27

01B

Minimum Length = 28

01C

Minimum Length = 29

01D

Minimum Length = 30

01E

Minimum Length = 31

01F

Minimum Length = 32

020

Minimum Length = 33

021

Minimum Length = 34

022

Minimum Length = 35

023

Minimum Length = 36

024

C.7 Security Level (KDC100/200/250)

Security level = 1

41

Security level = 2

42

Security level = 3

43

Security level = 4

44

C.8 Data Process - Wedge/Store (KDC100/200/250)

Wedge Only

Wedge & Store

Store Only

Wedge & Store if Sent

Wedge & Store if Not Sent

C.9 Data Process – Data Edit (KDC100/200/250)

Prefix Enter Start

Suffix Enter Start

Prefix/Suffix Enter Finish

Prefix/Suffix Enter Cancel

Delete Prefix

Delete Suffix

Display Prefix

Display Suffix

C.10 Data Process - Data Format – Handshake (KDC100/200/250)

Data format - Barcode only

84001

Data format - Packet data

84010

Enable Handshake

86001

Disable Handshake

86010

C.11 Data Process - Termination Character & Duplicate Check (KDC100/200/250)

None

88000

CR

88001

LF

88002

CR+LF

88003

Tab

88004

Check Duplicate Enabled

89001

Check Duplicate Disabled

89010

C.12 Bluetooth (KDC200/250)

Enable Bluetooth Power

60001

Disable Bluetooth Power

60010

Enter Pairing Mode

61001

Discovering Enable

61101

Discovering Disable

61110

Connect To Last

61201

Connecting to

61301

Enable Auto Connect

62001

Disable Auto Connect

62010

Enable Auto Power Off

64001

Disable Auto Power Off

64010

Enable Auto Power On

Disable Auto Power On

Disconnect

HID Sync

Enable Power Off Msg

Disable Power Off Msg

BT MAC Address

BT FW Version

Enable Wakeup Nulls

Disable Wakeup Nulls

Confirm To Send Enabled

Confirm To Send Disabled

Bluetooth Device type SPP

6A000

Bluetooth Device type HID iOS

6A001

Bluetooth Device type IPHONE

6A002

Bluetooth Device type SPP2.0

6A003

Bluetooth Device type HID Normal

6A004

BT Toggle Enable

6B001

BT Toggle Disable

6B010

HID Control Character Disabled

H2000

HID Control Character Alt+Numpad

H2001

HID Control Character ^+Character

H2002

C.13 Bluetooth Auto Power On Time (KDC200/250)

Auto Power On Time Disabled

Auto Power On Time 1sec

Auto Power On Time 2sec

Auto Power On Time 3sec

Auto Power On Time 4sec

Auto Power On Time 5sec

Auto Power On Time 6sec

Auto Power On Time 7sec

Auto Power On Time 8sec

Auto Power On Time 9sec

Auto Power On Time 10sec

Enable Beep Warning

Disable Beep Warning

C.14 Bluetooth PWR Off Time (KDC200/250)

1min

2min

3min

4min

5min

6min

7min

8min

9min

10min

11min

12min

13min

14min

15min

16min

17min

18min

19min

20min

21min

22min

23min

24min

25min

26min

27min

28min

29min

30min

C.15 Auto lock Time (KDC200/250)

0 min (Never)

6C000

1 min

6C001

2 min

6C002

3 min

6C003

4 min

6C004

5 min

6C005

10 min

6C00A

15 min

6C00F

C.16 HID Keyboard layout (KDC100/200/250)

US

German

French

Italian

Spanish

C.17 HID Initial Delay (KDC200/250)

Disabled

1 second

2 seconds

3 seconds

5 seconds

10 seconds

C.18 HID Character Delay (KDC200/250)

Disabled

H1000

10 msec

H100A

20 msec

H1014

30 msec

H101E

50 msec

H1032

100 msec

H1064

C.19 HID Control Character (KDC200/250)

Disabled

H2000

Alt+Numpad

H2001

^+Character

H2002

C.20 System (KDC100/200/250)

Memory Status

50001

Reset Memory

50002

Auto Erase Enable

5F001

Auto Erase Disable

5F010

Date/Time

52001

Battery

53001

Version

54001

Button Lock

55001

Button Unlock

55010

Enable Beep Sound

56001

Disable Beep Sound

56010

High Beep Volume

Low Beep Volume

Enable Auto Menu Exit

Disable Auto Menu Exit

Enable Port Status

Disable Port Status

Time & Battery

Type & Time

Type & Battery

Memory Status

GPS Data (KDC250)

Barcode Only

Enable Scrolling

Disable Scrolling

Factory Default

Confirm Memory size change

0.5M / 3.5M

1M / 3M

2M / 2M

3M / 1M

4M / 0M

C.21 Sleep Timeout (KDC100/200/250)

Disable

51000

1sec

51001

2sec

51002

3sec

51003

4sec

51004

5sec

51005

10sec

5100A

20sec

51014

30sec

5101E

1min

5103C

2min

51078

5min

5112C

10min

C.22 ETC (KDC100/200/250)

Reverse Direction Enable

Return check digit Enable

Verify check digit Enable

Reverse Direction Disable

Return check digit Disable

Verify check digit Disable

C.23 Function (KDC100/200/250)

F1

F2

F3

F4

F5

F6

F7

F8

F9

F10

F11

F12

C.24 Number (KDC100/200/250)

0

1

2

3

4

5

6

7

8

9

C.25 Lower Case Alphabet (KDC100/200/250)

a

b

c

d

e

f

g

h

i

j

k

l

m

n

o

p

q

r

s

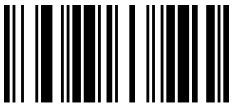
t

u

v

w

x



y

z

C.26 Upper Case Alphabet (KDC100/200/250)

A

B

C

D

E

F

G

H

I

J

K

L

M

714D

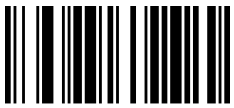
N

714E

O

714F

P

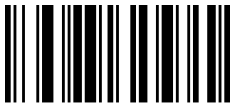


7150

Q

7151

R

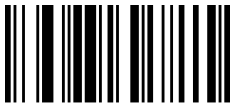


7152

S

7153

T



7154

U

7155

V

7156

W

7157

X

7158

Y

Z

C.27 Control Character (KDC100/200/250)

BS

TAB

LF

VT

CR

ESC

Space

DEL

C.28 Symbol Character (KDC100/200/250)

!

“

#

$

%

&

‘

(

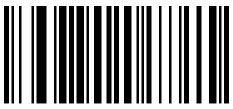
)

*

+

,

-



712D

.

712E

/

712F

:

713A

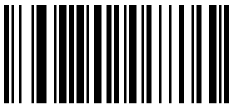
;

713B

<

713C

=



713D

>

713E

?

713F

@

7140

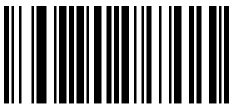
[

715B

\

715C

]



715D

^

715E

_

715F

`

7160

{

717B

|

717C

}

717D

~

717E

Start-String

7201

Stop-String

7210

Note:

- *You can compose a string up to 16 characters.*
- *A string would be composed by scanning the “Start-String”, number/alphabet/special characters, and “Stop-String” special barcodes.*
- *The KDC will abort string composition if you do not scan “Stop-String” in one minute after scanning “Start-String” and number/alphabet/special characters.*

C.29 GPS (KDC250)

GPS Power Enabled

GPS Power Disabled

GPS Bypass Data Enabled

GPS Bypass Data Disabled

Reset GPS Module

GPS Acquire Test

GPS Power Save Mode(Normal)

GPS Power Save Mode(Power Saving)

GPS Auto Power Off Enabled

GPS Auto Power Off Disabled

C.30 Auto Power Off Timeout (KDC250)

0 min (Disabled)

G4000

5 min

G4005

10 min

G400A

20 min

G4014

30 min

G401E

60 min

G403C

120 min

G4078

Display Format = GPS Data

58204

INDEX

Angle 32
Auto 93
barcode scanner *9*
Battery *22*, *37*, *106*, *107*
Beep 37, 47, 97
Bluetooth 93
Button 37
Clear 46, 64
Connect 93
data collectorSee barcode scanner
Date 37
Delay 48
Delimiter 48
EAN128 ..... 67, 74
EAN13 .... 67, 68, 69, 70, 71, 74
EAN8 ..... 67, 68, 69, 70, 74
Factory Default *110*
File 41, 44, 45
Filter 32
Format 33
Full 38, 64
Handshake 34, 36
High 32, 33
I2of5 70
ITF14 ..... 67, 74
KoamTac *9*, *39*, *64*, *65*, *66*, *74*, *76*
KTSync® *24*, *33*, *37*, *41*, *43*, *44*, *45*, *49*
LED 24, 38, 39, 64
Level 32
Memory 37, 64, 75
Menu 32, 33, 41, 42, 43, 44
Minimum 32
Narrow 32
Normal 32
Option 32, 41, 48, 50, 67, 69, 70
Order 48
Pairing 93
PDA 45, 64, 76
Power 93
Prefix 41, 48
Process 33
Reset 37
Resolution 71
Scan 32, 41, 47, 49, 64, 67
Security 32
Serial 65
Sleep 37
Special Barcodes *23*
Status 37, 38
Store 33, 34, 35, 47, 50
Suffix 48
Symbology 41, 69, 74
Synchronization *24*, *41*, *42*, *45*, *46*, *47*, *48*, *50*, *52*, *64*
Terminator 36
Time 32, 37, 48
Transmission 69, 70
UPCA 67, 68, 69, 70, 71, 73, 74
UPCE 67, 68, 69, 70, 71, 74
USB 38, 44, 64
Version 37
View 32
Website .....See Koamtac
Wedge 33, 47
Wide 32